146375

EX·LIBRIS·COLL·MED·PHILAD·INSTIT·A·D·MDCCLXXXVII

NON SIBI SED TOTI

Class ____ No. ____

IN EXCHANGE

7 ^{50}

M.E. 14 –

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/nebraskastatemed1919nebr

The Nebraska State Medical Journal

*

Volume 19
January 1934--December 1934

*

F. A. LONG, M. D., F. A. C. S.
Editor

R. B. ADAMS, M. D.
Business Manager

Committee on Journal and Publication

F. A. LONG, M. D., Chairman
B. F. BAILEY, M. D.
A. F. TYLER, M. D.
R. B. ADAMS, M. D., Ex-Officio

THE HUSE PUBLISHING CO., Norfolk, Nebraska

INDEX TO VOLUME 19

Abdominal Hodgkin's Disease: Case Report, J. Marshall Neely, M. D. 336
Account of the Influenza, An; Benjamin Rush, M. D. 410
Acne Vulgaris and the General Practitioner, Donald J. Wilson, A. B., M. D. 444
Acute Encephalitis and Inflammatory Cerebral Complications as Found in the General Practice of Medicine, Harrison A. Wigton, M. D., F. A. C. P. 316
Acute Mastoiditis Bilateral, Lateral Sinus Thrombosis, Cerebellar Abscess, Operation and Recovery, Herman E. Kully, M. D. 427
After Care of Infantile Paralysis, Mary Potts, R. N. 69
Allergic Manifestations of the Skin, L. J. Owen, M. D. 101
Annual Legislative Procedings, Nebraska State Medical Association 266
Artificial Impaction of Fractures in the Neck of the Femur, Herman F. Johnson, M. D., F. A. C. S. 416
Birth Injuries of the Child, Hugo Ehrenfest, M. D. 313
Blood Pressure Readings With Relationship to Body Surface and Weight, Newer Conceptions, A. C. Stokes, M. D. 182
Carcinoma of the Colon, Walter A. Fansler, M. D., F. A. C. S., and James K. Anderson, M. D. 361
Carcinoma of the Rectum and Its Management, Louis E. Moon, M. D. 13
Cardiac Therapy, Frederick Niehaus, M. D. 168
Case of Anthrax Septicemia, With Treatment by Massive Doses of Anti-Anthrax Serum, A, Gustav N. Nilsson, M. D. 457
Causal Relationship of Trauma to Paralysis Agitans, The, From the Surgeon's Viewpoint, H. C. Miller, A. B., M. D., F. A. C. S. 165
Cholecystitis Due to Brucella Melitensis, E. L. MacQuiddy, M. D., and James W. Martin, M. D. 227
Choice of Operation in Biliary Tract Disease, Harry H. Everett, M. D., and Roy H. Whitham, M. D. 387
Classification of Anemias, E. Burkett Reed, M. D. 253
Clinical Pathological Case Reports, Floyd L. Rogers, M. D., and J. Marshall Neely, M. D. 103
Clinical Pathological Case Reports, II, Floyd L. Rogers, M. D., and J. Marshall Neely, M. D. 149
Clinical Pathological Case Reports, III, Floyd L. Rogers, M. D., and J. Marshall Neely, M. D. 187
Clinical Pathological Case Reports, IV, Floyd L. Rogers, M. D., and J. Marshall Neely, M. D. 389
Clinical Recognition of Acute Coronary Thrombosis, James B. Herrick, M. D. 282
Collective Individualism in Medicine, E. H. Skinner, M. D. 163
Commonly Misunderstood Features About Cutaneous Cancer, Fred D. Weidman, M. D. 295
Complications of Pulmonary Tuberculosis, Leo. A. Conway, M. D. 1
Congenital Heart Disease, George W. Covey, M. D., and J. Marshall Neely, M. D. 204
Congenital Syphilis Is Preventable, Walter Clarke, M. B.; Ch. B.; F. R. C. P., Edin. 125
Correcting Deformities of the Velum and Mesopharynx to the Velum and Mesopharynx to Insure Better Speech Following Cleft Palate Surgery, H. N. Boyne, M. D., D. D. S., M. S. 407
Councilor Annual Meeting 104
Dermatophytosis Down to Date, Fred D. Weidman, M. D. 309
Diagnosis and Treatment of Renal Infection, J. C. Birdsall, M. D. 41
Discussion to Dr. Rowe's Paper on the Status of Irradiation of Living Tissue, in the July Number 346
Diseased Uterine Cervix, With a Preliminary Report on Schiller's Lugol Test, R. J. Stearns, M. D. 375
Diverticulitis, F. L. Wilson, M. D. 6

Editorials—
  About Vitamins 352
  Allergy Hint XI 33
  Allergy Hint XII 33
  Amebic Dysentery 30
  American Medical Association Convention, Cleveland, June 11-15 232
  Annual Dues 70
  Annual Meeting, The, Your Meeting 190
  Annual Meeting, The Nebraska Tuberculosis Association 197
  Application of Insurance Principal to Medical Fees 194
  Authoritative Health Education 192
  Auxiliary News Notes 38, 76, 118, 197, 236, 486
  Blood Pathology in Preoperative Surgery 463
  Calendar and Programs for the Lancaster County Medical Society for the Current Society Year 437
  Call for Papers 33, 70
  Cancer Problem in Nebraska 152
  Canton Hospital 465
  Celebrating Dr. P. H. Salter's Fifty Years of Medicine 464
  Cholera on Overland Trail 433
  Clinic Day at Bryan Memorial Hospital 466
  Composite on Membership in Medical Organizations, A 110
  Corn Meal As You Like It 114
  County Society Reactions to Federal Emergency Relief Funds 116
  Creighton University College of Medicine, Graduates, 1934, and Interneships 358
  Dart at the A. M. A. Leadership, A 353
  Declaration of Policy of the House of Delegates of the A. M. A. 353
  Declining Birth Rate, The 273
  Effect of Cooking on Vitamins in Foods, The 276
  End of Volume 19 463
  Endemicity of Malaria in Nebraska, The 71
  Epidemic Appendicitis? 191
  Extra-Mural Psychiatry 153
  Family Doctor and the Changing Order: The President's Address, The 351
  Fate of Transplanted Bone, The 231
  Federal Emergency Relief Funds for Nebraska Physicians 70
  Fever Therapy Research Project 465
  Floating Congress of the Pan American Medical Association, The 193
  Governmental Regulation or Governmental Medicine—Which? 111
  Granuloma Coccidioides: Further Observations on Use of Antimony and Potassium Tartrate and Roentgen Rays in Treatment 113
  Health Behaviour 118
  Health in the National Recovery 154
  Higher Carbohydrate Diet Method in Diabetes Mellitus 74
  Homeopathy, Allopathy 354
  How to Cite References: Attention Authors! 113
  How to Go to Sleep 34
  Human Convalescent Serum in the Treatment of Preparalytic Poliomyelitis 429
  Immediate Treatment of Compound Fractures: The Albee Bone Graft and Winnett Orr Method of Postoperative Care 113
  Important Medico-Legal Decision by the Nebraska Supreme Court, An 274
  Importance of Cheese 156
  Indian Obstetrics—Indian Abortions—Indian Immunity to Infections 466
  "Life in the Making" 31
  Long Articles and Long Bibliographies 231
  Making Motherhood Safe for Mothers 112
  Mantoux Test in Omaha and Lincoln 152
  May-Day—Child Health Day 193
  Medical Economics at the Annual Conference 428
  Medical Education in the United States 391
  Mother's Day and Maternal Mortality 191
  Nebraska Radiographers Society, The 118
  Nebraska Physicians at A. M. A. Meeting 279
  Nebraska Society of Radiographers 197
  Nebraska Woman's Medical Auxiliary Health Education Outline 1934-1935 356, 397
  New By-Law, A—Cancer Committee 273
  Newly Elected Officers 272
  New Year Invocation 28
  Notes on the Meeting of the Council on Medical Education and Hospitals 153
  Omaha-Midwest Clinical Number 281
  On Vacation 281
  Ordinary Mixed Diet, Best 233
  Philadelphia Academy of Surgery 197
  Physician in the Court Room, The 72
  Plan to Evaluate Independently Serologic Procedure for the Diagnosis of Syphilis in the United States, A 392
  Possibilities of the Genoa Indian School Property, The 190
  Postgraduate Courses at Home 460
  Presenting the Incoming President 191
  Present Status of the Serum Treatment of Poliomyelitis 391
  Privileged Communications 461
  Problem of the Inebriate and the Drug Addict in Nebraska, The 350
  Publication Board Changes Journal Policy, The 71
  Question of Mental Competency, A 190
  Reimbursement for Hospitals for Care of Indigent Injured in Automobile Accidents: The Ohio Law 228
  Repercussion on Super-Voltage Radiation, A 32
  Report of the Committee on Medical Economics of the Lancaster County Medical Society 35
  Research Laboratories of Lilly Formally Opened 462
  Restoration of the General Practitioner, The 194
  Rights of Physician and Duty of County Boards 431
  Rosenow Serum in Infantile Paralysis 353

Shakes in Nebraska 232
Sixty-Sixth Annual Meeting, The 272
Some Early Medical History of a Prairie State 393
State Emergency Relief for Medical Service to Indigent 390
State Medicine Not in Sight 464
Suggestions for Scheduling Annual Meeting Programs 28
Survey on Cretinism in the United States 114
Toward a Permanent Medical Aid Program 428
Trudeau, Dr. Edward Livingston 429
Tuberculosis Abstracts 37, 76, 117, 158, 235, 278, 435
Tuberculosis Hint 33
Venereal Disease Information 197
View Point on Socialized Medicine, A 232
University of Nebraska, College of Medicine, 1934 Graduates 357
Use of Digitalis Other Than in Treatment of Cardiac Decompensation 75
Why an Auxiliary? 354

Effects of Pregnancy and Disease Upon Each Other, Hugo Ehrenfest, M. D. 304
Electric Arc Welding—An Etiological Factor in Aplastic Anemia, O. C. Nickum, M. D. 347
Electro-Coagulation on Tonsils, L. C. Knight, M. D. 382
Enuresis, W. O. Colburn, M. D. 67
Etiological Viewpoint in Diagnosis of Heart Disease, B. Carl Russum, M. D. 97
Extra-Mural Psychiatry, Myron M. Campbell, M. D. 143
Federal Funds for Physicians Rendering Services to the Indigent, B. F. Lorance, M. D. 325
Fibromyomata of the Vaginal Wall, Albert F. Tyler, B. Sc., M. D. 257
Fixation Position for Optimum Joint Function, Robert D. Schrock, M. D. 211
Fixed Skeletal Traction in the Treatment of Fractures by the Use of the Kirschner Wire Technique in Plaster Casts, J. E. M. Thomson, A. B., F. A. C. S. 441
Fractures of the Forearm, B. R. McGrath, M. D., F. A. C. S. 372
Free Full-Thickness Skin Transplant, Robert D. Schrock, M. D., and Herman F. Johnson, M. D. 94
Idealism in the Medical Profession, Edmund G. Zimmerer, M. D., F. A. C. P. 333
Influence of Heredity in the Transmission of Ocular Defects, Charles M. Swab, M. D. 184
Installation of the President of the Nebraska State Medical Association 265
Laryngeal Papillomatosis, Philip L. Romonek, M. D., F. A. C. S. 130
Larynx and Its Relation to Bronchoscopy and Esophagoscopy, The, James P. Rigg, M. D. 448
Management of Hemorrhage in Duodenal Ulcer, M. C. Howard, M. D., and M. W. Barry, M. D. 367
Management of Prostatic Obstruction, C. A. Owens, M. D. 146
Massive Strangulation of the Intestine Due to a Non-Adherent Meckel's Diverticulum, C. H. Waters, B. Sc., M. D., F. A. C. S. 458
May Psychic Stimuli Produce Hay Fever?, O. C. Nickum, M. D. 224
Medical Profession, The, B. F. Bailey, M. D. 63
Methods of Infant Feeding as Used in the Newborn Clinic, University of Nebraska College of Medicine, the Past Three Years, C. G Weigand, M. D. 451
Migraine, Oliver C. Nickum, M. D. 26
Neurology and General Medicine, Lewis J. Pollock, M. D. 298
New Order, The—Our Medical Utopia, Joseph Bixby, M. D. 201
Nutritional Factor in Tuberculosis, Victor E. Levine, M. D. 10

Obituary—
Ames, Albro J. 469
Bartoo, Albon E. 76
Berry, William 35
Blakeley, Nathan 76
Boyd, Earl E. 469
Case, Ernest S. 35
Cassidy, George A. 235
Clark, Charles F. 116
Creighton, Ernest A. 297
Crummer, Leroy 76
Dailey, Eleanor S. 356
Eckles, Warren F. 397
Elmore, Shirley Q. 397
Ensor, Thomas H. 435
Gillespie, Peter L. 35
Guttery, William D. 356
Harvey, Rufus 356
Hedblom, Carl A. 278
Heilman, William Landes 469
Hendrickson, Charles W. 35
Hepperlin, Harry M. 235
Hewitt, Henry F. 157
Hoff, Albert E. 116
Johnston, Norman T. 76
Jonas, August Frederick 469
Lingenfelder, Julius 469
Mathews, Alexander L. 116
Mathews, John T. 278
Morrison, George A. 278
Neely, William J. 435
Neville, Dennis 157
Paddleford, James F. 469
Pallett, William H. 278
Quirk, Howard W. 356
Redfield, Willis J. 435
Roeder, George 397
Rundle, Walter G. 397
Schindel, Roscoe E. 278
Sedlacek, Frederick A. 278
Shephard, Charles C. 157
Shoemaker, Charles A. 35
Talbot, Robert C. 235
Telleson, Charles C. 235
Torbitt, William 235
Vance, Verne V. 35
Wilson, Oscar L. 116
Wolcott, Robert H. 116
Womble, Leigh H. 435
Youngman, John W. 356

Pathology and Treatment of Gallbladder Lesions, A. P. Condon, M. D. 121
Pilonidal Sinus, J. Harold Lynch, M. D. 20
Postoperative Care, H. S. Andrews, M. D. 419
Practical Consideration of Body Complaints in the Absence of Evidence of Organ Pathology, Richard H. Young, M. D. 179
Present Status of Serum Therapy in Pediatrics, Julius H. Hess, M. D. 288
Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 60
Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 343
Prostatic Resection, Arbor D. Munger, M. D. 81
Pseudoparalysis of Childhood, John V. Reilly, M. D. 453
Pulmonary Abscess, Joseph Weinberg, M. D. 222
Pulsion Esophago—Pharyngeal Diverticula, W. J. Arrasmith, M. D. 330
Radium and Rectal Carcinoma, Daniel T. Quigley, M. D. 138
Rational Treatment of Encephalitis, G. A. Young, M. D. 318
Rats: A Satisfactory Technique for Early Pregnancy Tests, Ruth Warner, M. D., and Grace Loveland, M. D. 134
Removal of Circular Plaster Casts—A Simpler Way, R. L. Hook, M. D. 151
Report of Cases of Poisoning Due to Shoe Dye, R. E. Harry, M. D. 455
Report of Committee on Public Policy and Legislation 260
Report of Delegates to Milwaukee Meeting of the A. M. A. 261
Report of Nebraska Delegate to A. M. A. Meeting of Council on Medical Education and Hosptials for 1934 263
Report of 46 Cases of Trichiniasis, Albert W. Anderson, M. D. 379
Review of Digitalis Therapy, Maine C. Anderson, M. D. 172
Rheumatic Fever in Children, J. Harry Murphy, M. D. 424
Sexual Neuroses as Problems in General Practice, A. L. Cooper, B. Sc., M. D. 176
Six Hundred Kilovolt Radiation, Roscoe L. Smith, M. D. 94
Some Problems of the Newborn the First Few Days of Life, Herman M. Jahr, M. D. 86
Symposium on Pneumonia—
Etiology of Pneumonia, Frank Conlin, M. D. 48
Laboratory Aids in the Diagnosis and Treatment of Pneumonia, A. S. Rubnitz, M. D. 54
Serology of Pneumonia, W. B. Moody, M. D. 55
Surgical Complications of Pneumonia, Joseph Weinberg, M. D. 58
Unrecognized Pneumonia, J. P. Tollman, M. D. 53
Tentative Program, Annual Meeting Nebraska State Medical Association 161
Tentative Program, Annual Meeting of the Woman's Auxiliary 162
Thyroid Disease Complicated by Pregnacy, Harry Evans Harvey, M. D., George W. Covey, M. D., and Clayton Andrews, M. D. 339
Transporation and First Aid in Fractures of the Extremities, C. Fred Ferciot, M. D. 404
Traumatic Neurosis, George Neuhaus, M. D. 348
Treatment of Chronic Empyema Thoracis, J. Dewey Bisgard, M. D. 413
Treatment of Some Common Organic Neurologic Syndromes, A. E. Bennett, M. D. 215
Tubercular Appendicitis, Max Emmert, M. D. 459
Tumor of the Pineal Body; Case Report, Lloyd Ragan, M. D. 258
Unusual Goitres, Max Emmert, M. D. 219
Use of Blood Serum in Pregnancy Tests, Harley E. Anderson, B. Sc., M. D. 98
Use of Live Maggots in the Treatment of Osteomyelitis, S. J. Carnazzo, M. D. 17

146375 MAR 24 1937

Use of Morphine in the Treatment of Acute Peritonitis, Thomas G. Orr, M. D. 401
Value of Sequestration Anemia in Surgery, C. H. Newell, M. D. 384
What Does a Primary Tuberculous Infection Prevent?, Chester A. Stewart, M. D. 321

AUTHORS

Anderson, Albert W., M. D. 379
Anderson, James K., M. D. 361
Anderson, Harley, B. Sc., M. D. 98
Anderson, Maine C., M. D. 172
Andrews, Clayton, M. D. 339
Andrews, H. S., M. D. 419
Arrasmith, W. J., M. D. 330
Bailey, B. F., M. D. 63
Barry, M. W., M. D. 367
Bennett, A. E., M. D. 215
Birdsall, J. C., M. D. 41
Bisgard, J. Dewey, M. D. 413
Bixby, Joseph, M. D. 201
Boyne, H. N., M. D., D. D. S., M. S. 407
Campbell, Myron M., M. D. 143
Carnazzo, S. J., M. D. 17
Clarke, Walter, M B., Ch. B., F. R. C. P., Edin. 125
Colburn, W. O., M. D. 67
Condon, A. P., M. D. 121
Conlin, Frank, M D. 48
Conway, Leo A., M. D. 1
Cooper, A. L., B. Sc., M. D. 176
Covey, George W., M. D. 204, 339
Davis, Herbert H., M. D., F. A. C. S. 60, 343
Egbert, C. L., M. D. 463
Ehrenfest, Hugo, M. D. 304, 313
Emmert, Max, M. D. 219, 459
Everett, Harry H., M. D. 387
Fansler, Walter A., M. D., F. A. C. S. 361
Ferciot, C. Fred, M. D. 404
Harry, R. E., M. D. 455
Harvey, Harry Evans, M. D. 339
Herrick, James B., M. D. 282
Hess, Julius H., M. D. 288
Hook, R. L., M. D. 151
Howard, M. C., M. D. 367
Jahr, Herman M., M. D. 86
Johnson, Czar, M. D. 461
Johnson, Herman F., M. D., F. A. C. S. 94, 416
Knight, L. C., M. D. 382
Kully, Herman E., M. D. 427
Levine, Victor E., M. D. 10
Lorance, B. F., M. D. 325
Loveland, Grace, M. D. 134
Long, F. A. 28, 29, 33, 70, 71, 72, 73, 110, 112, 115, 152, 157, 190, 191, 193, 195, 228, 231, 232, 233, 272, 273, 274, 276, 281, 350, 354, 390, 391, 393, 396, 428, 429, 431, 433, 434
Lynch, J. Harold, M. D. 20
McGrath, B. R., M. D., F. A. C. S. 372
MacQuiddy, E. L., M. D. 227
Martin, James W., M. S. 227
Miller, H. C., A. B., M. D., F. A. C. S. 165
Moody, W. B., M. D. 55
Moon, Louis E., M. D. 13
Munger, Arbor D., M. D. 81
Murphy, J. Harry, M. D. 424
Neely, J. Marshall, M. D. 103, 149, 187, 204, 336, 389
Neuhaus, George, M. D. 348
Newell, C. H., M. D. 384
Nickum, O. C., M. D. 26, 224, 347
Niehaus, Frederick, M. D. 168
Nilsson, Gustav N., M. D. 457
Orr, Thomas G., M. D. 401
Owens, C. A., M. D. 146
Owen, L. J., M. D. 101
Pollock, Lewis J., M. D. 298
Potts, Mary, R. N. 69
Quigley, Daniel T., M. D. 138
Ragan, Lloyd S., M. D. 258
Reed, E. Burkett, M. D. 253
Reilly, John V., M. D. 453
Rigg, James P., M. D. 448
Rogers, Floyd L., M. D. 103, 149, 187, 389
Romonek, Philip L., M. D., F. A. C. S. 130
Rowe, Edward W., M. D., M. Sc., F. A. C. P. 241
Rubnitz, A. S., M. D. 54
Rush, Benjamin, M. D. 410
Russum, B. Carl, M. D. 97
Sage, Earl C., M. D. 140
Schrock, Robert D., M. D. 94
Skinner, E. H., M. D. 163
Smith, Roscoe L., M. D. 94
Stearns, R. J., M. D. 375
Stewart, Chester A., M. D. 321
Stokes, A. C., M. D. 182
Swab, Charles M., M. D. 184
Thomson, J. E. M., A. B., M. D., F. A. C. S. 441
Tollman, J. P., M. D. 53
Tyler, Albert F., B. Sc., M. D. 257
Warner, Ruth, M. D. 134
Waters, C. H., B. Sc., M. D., F. A. C. S. 458
Weidman, Fred D., M. D. 295, 309
Weigand, C. G., M. D. 451
Weinberg, Joseph, M. D. 58, 222
Whitham, Roy H., M. D. 387
Wigton, Harrison, M. D., F. A. C. P. 316
Wilson, Donald J., A. B., M. D. 444
Wilson, F. L., M. D. 6
Young, G. A., M. D. 318
Young, Richard H., M. D. 179
Zimmerer, Edmond G., M. D., F. A. C. P. 333

Membership List Nebraska State Medican Association 1934

ADAMS
Anderson, H. F., Hastings
Andrews, H. S., Minden
Blume, W. R., Minden
Boren, A. J., Hastings
Brown, J. W., Hastings
Calbreath, C. B., Hastings
Davies, D. M., Ingleside
DeBacker, L. J., Hastings
Dever, C. R., Hastings
Egbert, C. L., Hastings
Egen, Lothar F., Hastings
Farrell, C. H., Ingleside
Feese, J. P., Hastings
Foote, E. C., Hastings
Guildner, C. Wayne, Kenesaw
Hamel, E. B., Hastings
Kelley, W. E., Ingleside
Kidder, C. E., Hastings
Kingsley, D. W., Hastings
Laird, C. R., Ingleside
Latta, E. J., Hastings
McPherson, J. B., Hastings
Mace, John L., Hastings
Martin, R. D., Hastings
Nielsen, J. C., Ingleside
Nowers, W. E., Kenesaw
Pinney, Geo. L., Hastings
Pittock, Harry J., Vet Hosp., American Lake, Washington
Rork, L. W., Hastings
Schaufelberger, Frank, Hastings
Shaw, W. L., Hastings
Smith, Arthur A., Hastings
Spicer, C. R., Hastings
Stretton, H. H., Ingleside
Sumner, Ella P., Hastings
Swanson, L. A., Hastings
Uridil, J. E., Hastings
—37

BOONE
Barns, Frank M., Albion
Davis, J. E., Albion
Drew, H. O., Albion
McRae, F. J, Albion
Reeder, Wm. J., Cedar Rapids
Schafer, L. H., Petersburg
Smith, J. W. B., Albion
Sullivan, G. W., St. Edwards
—8

BOX BUTTE
Bowman, L. W., Alliance
Copsey, H. A., Alliance
Howell, W. L., Hyannia
Johnston, G. F., Alliance
Knight, F. M., Alliance
Kuncl, Jos. J., Alliance
McCoy, John, Alliance
Miles, M. B., Alliance
Moronville, C. F., Hemingford
Slagle, C. E., Alliance
Sucgang, F. P., Alliance
Whitehead, E. I., Alliance
Williams, C. R., Hemingford
—13

BUFFALO
Abbott, Chas. E., Minden
Albertson, L. C., Kearney
Ayers, C. L., Kearney
Dickinson, L. E., Ravenna
Edwards, Chas. B., Kearney
Fox, C. H., Kearney
Gibbons, Chas. K. Kearney
Hansen, H. C., Kearney
Hapeman, Harry, Minden
Hart, R. L., Kearney
Havlicek, T. L., Amherst
Jester, R. F., Kearney
Johnson, O. D., Kearney
Johnston, R. S., Kearney
Jones, R. T., Gibbon
Laughlin, Joseph W., Elmcreek
Lucas, Chas., Shelton
Powell, W. H., Minden
Sidwell, L. T., Kearney
Stearns, L. M., Kearney
Yoder, Chas. A., Elmcreek
—21

BURT
Allen, James, Craig
Benson, Harry, Oakland
Briggs, G. W., Walthill
Keetel, W. C., Lyons
Heacock, Frank M., Lyons
Lukens, Isaiah, Tekamah
Morrow, L., Tekamah
Sauer, L. E., Tekamah
Swenson, S. A., Oakland
Wood, M., Tekamah
—10

BUTLER
Beede, Clark, David City
Burdick, D. D., David City
Burdick, H. E., David City
Downing, J. H., Rising City
Fair, G. K., Bellwood
Jeffers, Paul C., David City
Kreymborg, O. C., Brainard
Longacre, O. E., Rising City
Stannard, J. T., Ulysses
—9

CASS
Brendel, J. W., Avoca
Douglas, G. G., Elmwood
Gilmore, G. H., Murray
Lee, L. D., Murdock
Liston, O. E., Elmwood
Stewart, E. M., Eagle
Talcott, N. D., Greenwood
Thomas, M. U., Weeping Water
Tyson, R. W., Murray
Walters, H. W., Nehawka
Worthman, Edw. H., Louisville
Worthman, H. W., Louisville
—12

CEDAR-DIXON-DAKOTA-THURSTON-WAYNE
Benthock, Walter, Wayne
Blair, E. R., Wayne
Bray, R. E., Martinsburg
Buis, John, Pender
Carroll, R. P., Laurel
Coe, C. B., Wakefield
Cook, A. E., Randolph
Cook, S. H., Randolph
Dewey, F. G., Coleridge
Graham, J. R., Allen
Gramlich, R. C., Walthill
Johnson, J. M., Hartington
Kildebeck, J. C., Emerson
Kilian, L. J., Wakefield
King, J. W., Hartington
Larsen, A. A., Homer
Luhman, F. W., Pender
Lutton, J. D., Laurel
Neill, C. H., So. Sioux City
Peters, G. E., Randolph
Richards, R. C., Newcastle
Tellesen, C. C., Wynot
—22

CHASE-DUNDY-HAYES-HITCHCOCK
Brown, L. B., Stratton
Carlson, C. Robt., Wauneta
Fellers, A. B., Palisade
Grosbach, H. H., Wauneta
Hoffmeister, Geo., Imperial
Karrer, F. M., Palisade
Krampert, F. L., Imperial
Leeper, D. D., Holbrook
Miller, E. E., Culbertson
Morse, D. L., Hayes Center
Premer, J. F., Benkelman
Prest, J. E., Trenton
Stewart, J. N., Stratton
Stewart, W. E., Stratton
—14

CHEYENNE-KIMBALL
Abbott, Dee L., Sidney
Blackstone, Herbert Alva, Gurley
Callsion, Robert, Potter
Coleman, A. C., Chappell
Everett, R. A., Kimball
Harris, S. O., Chappell
Hook, R. L., Lodgepole
Miller, A. L., Kimball
Mockett, P. C., Kimball
Pankau, J. B., Dalton
Roche, R. E., Sidney
Rolph, E. L., Kimball
Sinclair, Roy D., Kimball
Taylor, J. R., Sidney
—14

CLAY
Asa, O. C., Ong
Harvey, E. A., Fairfield
Latta, J. O., Clay Center
Nuss, H. V., Sutton
Nutzman, Chas. L., Seward
Seely, H. H., Harvard
Welch, J. M., Sutton
—7

COLFAX
Eby, Chas. D., Leigh
Kavan, W. J., Clarkson
Kolouch, Fred G., Schuyler
Koory, S. B., Schuyler
Novak, F. W., Howells
Sixta, L. H., Schuyler
Vosika, Fred G., Clarkson
—7

CUSTER
Bryson, R. D., Callaway
Burnham, Arnold, Bridgeport
Burnham, F. A., Arnold
Davies, J. F., Callaway
Forney, L. W., Mason City
Higgins, R. P., Ansley
Jeffers, B. F., Ansley
Koefoot, Theo. H., Broken Bow
Kantor, D. B., Sargent
Morrow, J. H., Merna
Mullins, C. L., Broken Bow
Pennington, G. E., Broken Bow
Rydberg, C. A., Litchfield
—13

DAWSON
Anderson, Arthur, Lexington
Birkofer, W. J., Gothenburg
Dorwart, T. Y., Lexington
Fochtman, L. H., Cozad
Fochtman, Mary, Cozad
Harvey, H. M., Gothenburg
Kile, J. B., Eddyville
Liggitt, John M., Farnam
Norall, Victor Delmar, Lexington
Pelikan, C. C., Overton
Pyle, B. W., Gothenburg
Reeves, Alfred E., Farnam
Rosenau, Oliver P., Eustis
Sheets, Chas. H., Cozad
Stevenson, E. C., Gothenburg
Wycoff, Roy S., Lexington
—16

DODGE
Bloch, D. M., Arlington
Buchanan, A. E., Fremont
Byers, Geo. A., North Bend
Byers, Chas. R., Fremont
Davies, R. A., Arlington
Devries, J. S., Fremont
Fasser, A. O., Fremont
Harvey, Andrew, Fremont
Haslam, Geo. A., Fremont
Hauser, B. B., Hooper
Heine, C. D., Hooper
Heine, W. H., Fremont
Kenney, B. V., Dodge
Limburg, J. I., Fremont
Meyers, H. D., Howells
Moore, C. G., Fremont
Morrow, H. N., Fremont
Morrow, H. H., Fremont
Pedersen, H. C., Fremont
Reeder, Grant, Fremont
Seivers, C. P., Fremont
Seward, Guy, Fremont
Stuart, A. E., Cedar Bluffs
Van Metre, R. T., Fremont
Wallin, S. P., Snyder
—25

FILLMORE
Anderson, August N., Shickley
Ashby, A. A., Fairmont
Bixby, J., Geneva
Hickman, J. C., Geneva
Musfelt, W. Stanley, Ohiowa
Smrha, V. V., Milligan
Stansberry, Don C., Geneva
Wiggins, Carrol W., Shickley
Wiggins, W. S., Exeter
—9

FRANKLIN
Chapman, Amy Robinson, Franklin
Campbell, R. B., Franklin
Devers, W. I., Upland
Neville, Dennis, Hildreth
Nail, F. T., Riverton
Packwood, W. E., Riverton
Smith, Hal C., Franklin
Sparks, M. L., Bloomington
—8

FURNAS
Miller, W. C., Arapahoe
Minnick, C. E., Cambridge
Stewart, B. F., Cambridge
Shank, F. W., Oxford
Warner, Sophia E., Arapahoe
—5

GAGE
Backle, E. P., Liberty
Bradley, C. A., Beatrice

Brown, H. R., Beatrice
Bryant, A. R., Beatrice
Buchanan, R., Beatrice
Buckley, F. W., Beatrice
Burford, J. R., Beatrice
Elias, Francis, Wymore
Fall, C. P., Beatrice
Gafford, C. C., Wymore
Hepperlen, H. M., Jr., Beatrice
Hurtig, H. G., Hanover, Kan.
Lee, A., Pickrel
Leibee, J. R., Beatrice
McGirr, J. I., Beatrice
Moritz, J. G., Beatrice
Noble, R. C., Beatrice
Penner, H. G., Beatrice
Penner, L. E., Beatrice
Pickett, I. N., Odell
Rice, C. E., Odell
Runty, H. D., DeWitt
Schowengerdt, F. T., Cortland
Skinner, A. O., Beatrice
Swartwood, F. M., Adams
Taylor, Robert W., Beatrice
Thomas, Chas. W., Wymore
Waddell, J. C., Beatrice
Waggoner, J. T., Adams
Walden, C. W., Beatrice
Warner, E. A., Blue Springs
Wildhaber, W. T., Beatrice

—32

HALL-MERRICK-HOWARD

Amick, Carl G., Loup City
Arrasmith, W. J., Grand Island
Arrasmith, W. W., Grand Island
Benton, Jos. E., Central City
Brown, A. D., Central City
Douglas, R. R., Clarks
Farnsworth, E. E., Grand Island
Fouts, Fredrick, Central City
Gelow, J. E., Grand Island
Higgins, J. E., Grand Island
Hombach, Wm. H., Grand Island
Hubbell, A. T., Wood River
Hutchison, J. W., Central City
Johnson, A. J., Grand Island
Johnson, E. G., Grand Island
McGrath, B. R., Grand Island
McGrath, W. D., Grand Island
Piersol, M. R., Cairo
Reilly, John V., Grand Island
Rich, Edward, Grand Island
Rigg, James Paul, Grand Island
Roeder, Geo., Sacramento, Calif.
Royer, Howard, Scotia
Ryder, Frank D., Grand Island
Sawyer, R. E., Doniphan
Sherfey, Carl, Burkette
Synhorst, A. P., Grand Island
Tripplett, T. M., Burkette
Watson, E. A., Grand Island
Woodin, I. G., Grand Island
Woodruff, R. C., Grand Island

—31

HAMILTON

Kostal, O. A., Giltner
Steenberg, Donald B., Aurora
Steenberg, E. A., Aurora
Steenberg, E. K., Aurora
Troester, Otto M., Hampton
Weaver, Ralph L., Marquette
Woodard, J. M., Aurora

—7

HARLAN

Bartlett, W. C., Alma
Campbell, J. N., Stamford
Gardiner, A. J., Orleans
Kerr, Robert H., Alma
Pohl, L. K., Alma

—5

HOLT AND N. W.

Brady, R. R., Wood Lake
Brown, J. P., O'Neill
Carrig, M. H., Stuart
Broz, J. S., Rushville
Compton, Arthur N., Valentine
Douglas, W. J., Atkinson
Dwyer, E. H., Gordon
Finley, W. F., O'Neill
French, O. W., Page
Gill, James W., Chambers
Johnson, Chester, Valentine
Lear, Wm. D., Springview
McKee, Neil P., Atkinson
Oxford, Edwin J., Chambers
Peterson, R. L., Cody
Rasck, Alfred G., Ainsworth
Remy, G. O., Ainsworth
Sturdevant, C. L., Atkinson
Sullivan, P. J., Rushville
Taber, J. H., Gordon
Vennemann, F. W., Spencer
Wilson, F. L., Stuart

—22

HOWARD

Arnold, Merton O., St. Paul
Condon, F. J., St. Paul
Hanisch, E. C., St. Paul
Holm, A. H., Wolbach
Hynes, W. P., Washington, D. C.
Pedersen, P. M., Dannebrog
Racines, J. Y., Palmer
Wengert, D. B., St. Paul

—8

JEFFERSON

Ainlay, Geo. W., Fairbury
Heath, G. A., Fairbury
Hughes, D. O., Fairbury
Humphrey, H. H., Daykin
Luce, Roscoe P., Fairbury
Lynch, G. M., Fairbury
Lynch, J. Harold, Fairbury
Meisenbach, Geo. W., Plymouth
Potter, H. E., Fairbury
Taylor, J. S., Fairbury

—10

JOHNSON

Barnes, Chester D., Tecumseh
Conlee, C. C., Cook
Fitzsimmons, A. P., Tecumseh
Heilman, W. L., Sterling
Howard, Sullivan, Elk Creek
Lanspa, J. A., Tecumseh
Martin, L. P., Cook
Morrill, Walter LeRoy, Sterling
Rubleman, Geo. J., Tecumseh
Turner, J. W., Sterling
Zeigler, Chas. H., Vesta

—11

LANCASTER

Adams, R. B., Lincoln
Albin, W. L., Lincoln
Alcorn, Floyd A., Lincoln
Andrews, C. F., Lincoln
Andrus, F. M., Lincoln
Angle, E. E., Lincoln
Angle, E. J., Lincoln
Arnholt, M. F., Lincoln
Arnold, C. H., Lincoln
Bailey, B. F., Lincoln
Barkey, V. S., Lincoln
Bartholomew, P. H., Lincoln
Becker, Wesley C., Lincoln
Black, Paul, Lincoln
Bowman, D. J., Lincoln
Blum, Henry, Lincoln
Breuer, C. H., Lincoln
Breuer, Miles J., Lincoln
Brooks, E. B., Lincoln
Calhoun, O. V., Lincoln
Carveth, Walter W., Lincoln
Campbell, W. Allen, Lincoln
Churchill, I. W., Lincoln
Colburn, W. O., Lincoln
Coleman, F. D., Lincoln
Cook, S. E., Lincoln
Covey, Geo. W., Lincoln
Cummings, E. D., Lincoln
Deppen, E. N., Lincoln
Easton, R. H., Lincoln
Elliott, C. K., Lincoln
Emerson, C., Lincoln
Everett, Ernest, Lincoln
Everett, H. H., Lincoln
Everett, O. W., Lincoln
Fahnestock, C. L.
Fenton, Bryan E., Lincoln
Ferciot, C. Fred, Lincoln
Finkle, B. A., Lincoln
Flanagan, May L., Lincoln
Finney, E. B., Lincoln
Finney, Lawrence, Lincoln
Flansburg, H. E., Lincoln
Frey, C. Elmer, Lincoln
Furgason, A. P., Lincoln
Furman, F. S., Lincoln
Gibson, L. V., Lincoln
Graham, A. Winifred, Lincoln
Graham, F. A., Lincoln
Griffiths, D. G., Lincoln
Hammond, Margaret, Lincoln
Hancock, E. W., Lincoln
Hansen, E. M., Lincoln
Harms, Chas. W. W., Lincoln
Harvey, H. E., Lincoln
Hickman, C. C., Lincoln
Hilton, D. C., Lincoln
Hohlen, K. S. J., Lincoln
Hollenbeck, F. B., Lincoln
Hompes, J. J., Lincoln
Hummel, R. O., Lincoln
Johnson, F. B., Lincoln
Johnson, C. C., Lincoln
Katskee, E. K., Lincoln
Knight, L. C., Lincoln
Lehnhoff, H. J., Lincoln
Lewis, George, Lincoln
Loomis, J. J., Lincoln
Loveland, Grace, Lincoln
Lovell, A. I., Lincoln
Lyman, R. A., Lincoln
McCarthy, T. F., Lincoln
Marx, Louis E., Lincoln
Misko, George, Lincoln
Moyer, T. C., Lincoln
Munger, Arbor D., Lincoln
Munger, I. C., Jr., Lincoln
Munger, I. C., Lincoln
Neely, J. Marshall, Lincoln
Oakley, E. Reed, Lincoln
Olney, R. C., Lincoln
Orr, H. W., Lincoln
Owen, L. J., Lincoln
Peterson, John, Lincoln
Podlesak, James J., Lincoln
Reed, E. B., Lincoln
Reese, S. O., Lincoln
Reinhardt, O. A., Lincoln
Reynolds, R. W., Lincoln
Rider, E. E., Lincoln
Rogers, F. L., Lincoln
Rowe, E. W., Lincoln
Royal, Paul, Lincoln
Ryerson, F. R., Lincoln
Sanderson, D. D., Lincoln
Sawyer, R. H., Lincoln
Smith, A. L., Lincoln
Smith, R. L., Lincoln
Snipes, J. J., Lincoln
Spradling, F. L., Lincoln
Stapleton, Harvey B., Hickman
Strader, R. M., Lincoln
Taylor, H. A., Lincoln
Teal, Fritz, Lincoln
Teal, F. F., Lincoln
Thomas, J. W., Lincoln
Thomson, J. E. M., Lincoln
Thompson, J. C., Lincoln
Underwood, Geo. R., Lincoln
Walker, G. H., Lincoln
Warner, Ruth, Lincoln
Webb, Adin H., Lincoln
Wegner, E. S., Lincoln
Welch, J. S., Lincoln
Williams, B. F., Lincoln
Whitham, Roy H., Lincoln
Wiedman, Earl V., Lincoln
Williams, J. P., Lincoln
Wilson, W. H., Lincoln
Woodward, J. M., Lincoln
Zemer, S. G., Lincoln
Zimmerer, Edmond G., Lincoln

—122

LINCOLN

Anderson, Joel, North Platte
Bell, F. M., Grant
Clark, L. Harvey, North Platte
Dent, Geo. B., North Platte
Dent, Townsend, North Platte
Fetter, Earl W., North Platte
Heider, Chas. F., North Platte
Hombach, L. J., North Platte
Kerr, T. J., North Platte
McGraw, Agnes, Tryon
Morris, Geo. H., Oshkosh
Newman, J. C., Wallace
Ostling, Evert H., Lewellen
Platte, O. R., North Platte
Redfield, J. B., North Platte
Russell, R. S., Sutherland
Schneider, A. L., Brady
Selby, Claude A., North Platte
Stevenson, Edward, North Platte
Sudman, Albert F., North Platte
Valentine, Linville F., Mullen
Vandiver, H. A., Ogallala
Walker, D. A., Mullen
Walker, H. H., North Platte
Walternath, Glenn, North Platte
Weyer, S. M., Ogallala
Wilmeth, O. C., Hershey
Wortman, A. V., Curtis
Wurtele, Fred J., North Platte

—29

MADISON-STANTON—ETC.

Allen, S. A., Stanton
Anderson, Albert W., West Point
Barber, T. M., Norfolk
Barr, C. C., Tilden
Barry, Augustus, Norfolk
Bennie, J. W., Clearwater
Brauer, S. H., Norfolk
Bruce, J. J., Madison
Brush, E. L., Norfolk
Burrell, R. H., Creighton
Calvert, John H., Pierce

Campbell, S. A., Norfolk
Clark, W. K., Valentine
Craft, W. T., Brunswick
Charlton, G. E., Norfolk
Conwell, George, Norfolk
Drummond, C. C., Norfolk
Farner, B., Norfolk
Fletcher, D. L., Orchard
Fletcher, T. W., Orchard
Francis, H. W., Bancroft
Frary, R. A., Stanton
Gadbois, Arthur E., Norfolk
Green, Carl, Niobrara
Hansen, Geo. M., Madison
Harrison, U. S., Neligh
Hoefer, C. A., Wisner
Howley, A. N., Norfolk
Jensen, Frank, Newman Grove
Jensen, J. P., Plainview
Johnson, L. A., Plainview
Johnson, Rudolph E., Wausa
Kiefer, J. J., West Point
Kindred, H. L., Meadow Grove
Lonergon, P. B., Bloomfield
Long, F. A., Madison
Maillard, A. E., Osmond
Melerian, H., Plainview
Morrow, J. K., Norfolk
Mullong, Chas. R., Norfolk
Nilsson, G. N., Bloomfield
Nye, F. H., Plainview
Palmateer, H. R., Madison
Pierson, C. A., Beemer
Pollock, F. A., Norfolk
Reid, John, Pilger
Riley, Lincoln, Wisner
Robbins, M. H., West Point
Rodgers, C. E., Osmond
Rorer, Emily F., Santee
Rudloff, F. X., Battle Creek
Salter, P. H., Norfolk
Salter, Geo. B., Norfolk
Sercl, William F., Wisner
Stark, Lucien, Norfolk
Swift, C. H., Crofton
Tanner, Edward, Battle Creek
Tennant, H. S., Stanton
Thompson, I. L., West Point
Waters, T. H., Norfolk
Winkle, V. M., Norfolk
Wright, Wm. E., Creighton
Young, G. A., Norfolk
—63

NANCE

Cleary, J. A., Fullerton
Davis, Homer, Genoa
Johnson, F. W., Fullerton
King, H. E., Fullerton
Newton, R. A., Genoa
Williams, C. D., Genoa
—6

NEMAHA

Cline, Edgar, Auburn
Irvin, I. W., Auburn
Joder, Glen H., Peru
Lorance, B. F., Auburn
Lutgen, C. A., Auburn
Smith, B. A., Auburn
Stappenbeck, Paul H., Brock
Tusla, F. M., Auburn
Tyler, E. M., Auburn
—9

NORTHWEST NEBRASKA

Courshon, A. J., Chadron
Griot, A. J., Chadron
Griot, Geo. A., Chadron
Pierce, C. M., Chadron
—4

NUCKOLLS

McMahon, Chas. G., Superior
Nelson, William N., Hardy
Phillips, C. L., Superior
Stubblefield, H. I., Ruskin
Trowbridge, J. A., Superior
—5

OMAHA-DOUGLAS

Adams, W. J., Omaha
Allen, J. F., Omaha
Allingham, H. T., Omaha
Anderson, Harley E., Omaha
Anderson, M. C., Omaha
Anderson, R. R., Omaha
Arntsen, L. L., Omaha
Bantin, Clarence F., Omaha
Bantin, Elmer W., Omaha
Baptist, Jno., Omaha
Barnhardt, E. G., Omaha
Barry, M. William, Omaha
Bean, Francis J., Omaha
Beck, Fred O., Omaha
Bennett, A. E., Omaha
Best, R. Russell, Omaha
Betz, Donald A., Bellevue
Betz, Wm. H., Omaha
Bisgard, J. Dewey, Omaha
Bleick, L. C., Omaha
Bliss, Rodney W., Omaha
Boler, Thos. D., Omaha
Borghoff, J. A., Omaha
Boyne, Harry, Omaha
Brandt, Emelia H., Omaha
Bridges, E. L., Omaha
Bridges, Wilson O., Omaha
Brown, Aldred J., Omaha
Burns, B. C., Omaha
Bushman, Louis B., Omaha
Callfas, Wm. F., Omaha
Cameron, Olin J., Omaha
Carnazzo, S. A., Omaha
Carnazzo, S. J., Omaha
Cassidy, W. A., Omaha
Catania, Nancy, Omaha
Christie, Burton W., Omaha
Christieb, J. M., Omaha
Clark, Chas. F., Omaha
Clarke, Floyd, Omaha
Cloyd, Augustus D., Omaha
Cloyd, A. David, Omaha
Condon, A. P., Omaha
Conlin, Frank M., Omaha
Connelly, E. A., Omaha
Cook, L. J., Omaha
Courtney, J. E., Omaha
Cross, Clara, Omaha
Cuscaden, Gertrude, Omaha
Davis, Edwin G., Omaha
Davis, Herbert H., Omaha
Davis, Jno. C., Jr., Omaha
Davis, Wm. Windle, Omaha
DeLanney, L. A., Omaha
Dishong, G. W., Omaha
Dodge, Roy A., Omaha
Dorsch, W. A., Omaha
Dow, Andrew G., Omaha
Dowell, D. Arnold, Omaha
Duncan, J. W., Omaha
Dunn, F. Lowell, Omaha
Dwyer, J. R., Omaha
Dunn, Arthur D., Omaha
Edgington, Avington A., Omaha
Egan, Wm. J., Omaha
Eldredge, R. B., Omaha
Emmert, Max, Omaha
Erman, Jacob M., Omaha
Evans, Edward B., Omaha
Ewing, Ben F., Omaha
Faier, Samuel Z., Omaha
Fairchild, Nora M., Omaha
Faulk, F. W., Omaha
Findley, Palmer, Omaha
Fitzgibbons, Henry M., Omaha
Fleishman, Max, Omaha
Fouts, R. W., Omaha
Frandsen, Chas., Omaha
Freymann, J. J., Omaha
Gardner, J. F., Omaha
Gerald, H. F., Omaha
Green, M. C., Omaha
Greenberg, Abraham, Omaha
Grier, M. E., Omaha
Grodinsky, Manuel, Omaha
Gurney, Charles E., Omaha
Hall, Lynn T., Omaha
Hamilton, Herschel P., Omaha
Hamilton, Howard B., Omaha
Haney, W. P., Omaha
Hanisch, L. E., Omaha
Hardy, C. C., Omaha
Harris, T. T., Omaha
Hellwig, John W., Omaha
Heagey, Francis W., Omaha
Henry, Edwin C., Omaha
Henske, Jos. A., Omaha
Heumann, J. M. F., Omaha
Hickey, C. W., Bennington
Hill, F. C., Omaha
Hirschman, Herman, Omaha
Hoffman, L. O., Omaha
Hollister, Robert R., Omaha
Hollenback, Carl F., Omaha
Holovtchiner, E., Omaha
Holst, John, Omaha
Hotz, Harley, Omaha
Howard, M. C., Omaha
Hubenka, Albin H., Omaha
Humpal, J. J., Omaha
Hunt, Howard B., Omaha
Hyde, John F., Omaha
Impey, Chester C., Omaha
Jahr, Herman M., Omaha
James, C. S., Omaha
Jefferson, Alfred, Omaha
Jenkins, Harry J., Omaha
Jenkins, P. Hamilton, Omaha
Jensen, W. P., Omaha
Johnson, A. C., Omaha
Johnson, H. F., Omaha
Johnson, Julius A., Omaha
Jonas, August F., Omaha
Judd, J. H., Omaha
Kadavy, G. J., Omaha
Kani, Mantz A., Omaha
Keegan, J. J., Omaha
Kelley, Ernest, Omaha
Kelley, James F., Omaha
Kennedy, Chas. R., Omaha
Kinyoun, F. H., Omaha
Kirk, E. J., Omaha
Kleyla, Jno. R., Omaha
Knode, Archibald R., Omaha
Koenig, Margaret W., Omaha
Koutskey, John W., Omaha
Kroupa, William E., Omaha
Kully, B. M., Omaha
Kully, Herman E., Omaha
Langdon, J. Frederick, Omaha
Lennox, Geo. B., Omaha
Levey, Philip, Omaha
Lindquist, A. B., Omaha
Lovely, Frank T., Omaha
Lord, John P., Omaha
Lovelady, Ralph, Sidney, Iowa
Luikart, Ralph H., Omaha
Lukovsky, Jos. F., Omaha
McCarthy, Joseph D., Omaha
McCleneghen, Sam, Omaha
McCurdy, Thomas, Omaha
McDermott, Arnold, Omaha
McEachen, Esther I., Omaha
McGee, Harry E., Omaha
McGee, J. W., Omaha
McGuire, L. D., Omaha
McGoogan, Leon S., Omaha
McKean, J. W., Chiengmai, China
McMartin, Chas., Omaha
McMartin, W. J., Omaha
McNamara, J. W., Omaha
MacQuiddy, E. L., Omaha
Maloney, Ed. S., Omaha
Manning, Ernest T., Omaha
Marble, R. E., Omaha
Margolin, M., Omaha
Martin, Otis, Omaha
Mason, C. W., Cheingmai, China
Martin, Jas. W., Omaha
Maxwell, J. T., Omaha
Mauer, R. Thornell, Omaha
Mercer, Nelson S., Omaha
Miller, Glen, Omaha
Miller, H. C., Omaha
Milroy, Wm. F., Omaha
Minthorn, Martin L., Omaha
Moody, W. B., Omaha
Moon, Chas. F., Omaha
Moon, Louis E., Omaha
Moore, Clyde, Omaha
Moran, C. S., Omaha
Moser, R. A., Omaha
Murphy, F. P., Omaha
Murphy, J. H., Omaha
Murray, F. J., Omaha
Muskin, Nathan, Omaha
Myers, John T., Omaha
Nemec, Chas. J., Omaha
Neuhaus, George, Omaha
Newell, Chas. H., Omaha
Newman, Jas. K., Omaha
Niehaus, F. W., Omaha
Nilsson, J. R., Omaha
Nolan, W. J., Omaha
O'Donnell, Reynolds J., Columbus
Offerman, A. J., Omaha
O'Hearn, J. J., Omaha
O'Sullivan, Margaret J., Omaha
Overgaard, A. P., Omaha
Owen, C. A., Omaha
Owen, D. R., Omaha
Parsons, Antony, Valley
Peterson, Alfred O., Omaha
Peterson, Ward A., Omaha
Pinto, A. Sherman, Omaha
Pohlman, A. G., Omaha
Pollard, Chas. W., Omaha
Porter, Elmer R., Omaha
Potter, Geo. B., Omaha
Potts, Jno. B., Omaha
Poynter, C. W. M., Omaha
Pratt, George, Omaha
Pruner, A. C., Omaha
Pulver, John Earle, Omaha
Quigley, D. T., Omaha
Quigley, Willard H., Omaha
Rance, Wm. T., Omaha
Rasworshek, R. H., Omaha
Redgwick, J. P., Omaha

Reed, Stanley G., Omaha
Rich, Chas. O'N., Omaha
Riley, Bryan M., Omaha
Rix, Rudolph, Omaha
Robertson, Geo. E., Omaha
Roeder, Clyde A., Omaha
Romanek, P., Omaha
Ross, Wm. L., Omaha
Rubendall, Clarence, Omaha
Rubnitz, A. S., Omaha
Russum, Carl B., Omaha
Sachs, Adolph, Omaha
Sage, E. C., Omaha
Sands, Robt. L., Omaha
Schalek, Alfred, Omaha
Schindel, Roscoe E., Omaha
Schleier, Frank J., Omaha
Schmitz, W. H., Omaha
Schramek, Chas. J., Omaha
Schrock, Robert D., Omaha
Schroeder, R. L., Osceola
Severin, M. J., Omaha
Shearer, W. L., Omaha
Sher, Philip, Omaha
Shramek, J. M., Omaha
Shone, Lloyd B., Omaha
Simanek, Geo. F., Omaha
Simmons, Eugene E., Omaha
Simpson, John E., Omaha
Stastny, Olga, Omaha
Stearns, R. J., Omaha
Steinberg, A. A., Omaha
Stokes, Arthur C., Omaha
Stokes, William H., Omaha
Strickland, W. R., Omaha
Sucha, W. L., Omaha
Sullivan, H. T., Omaha
Sullivan, H. K. O'C., Omaha
Sullivan, J. P., Omaha
Summers, John E., Omaha
Sumney, H. C., Omaha
Swab, Elizabeth M., Omaha
Swab, Chas. M., Omaha
Swoboda, F. J., Omaha
Tamiseia, John A., Omaha
Taylor, Willis H., Omaha
Thompson, Chester Q., Omaha
Thompson, Warren Y., Omaha
Thomsen, John H., Omaha
Tollman, J. P., Omaha
Tomlinson, C. C., Omaha
Torpy, Thos. W., Omaha
Traynor, R. L., Omaha
Trimble, C. R., Omaha
Tyler, Albert F., Omaha
Uren, Claude T., Omaha
Vance, John H., Omaha
Van Camp, Lee B., Omaha
Vetter, J. G., Omaha
Walker, W. H., Omaha
Walsh, E. M., Omaha
Waters, Chester H., Omaha
Wearne, Fred J., Omaha
Weigand, C. G., Omaha
Weinberg, Jos. A., Omaha
Wherry, Wm. P., Omaha
Whitcomb, Glen D., Omaha
Wigton, H. A., Omaha
Wilcox, C. W., Omaha
Wilhelmy, C. M., Omaha
Wilson, D. J., Omaha
Winterson, G. C., Omaha
Wood, Irwing C., Omaha
Young, Alex, Omaha
Young, G. Alex., Omaha
Young, Richard H., Omaha
—295

OTOE
Charlton, C. P., Palmyra
Crudup, C. P., Nebraska City
Dieter, L. D., Otoe
Gibbon, W. D., Dunbar
Gilligan, J. P., Jr., Nebraska City
Gritzka, T. L., Talmage
Kenner, W. C., Nebraska City
Hillis, W. E., Syracuse
Loder, R. H., Syracuse
MacVean, M. M., Nebraska City
Mayer, Chas. F., Burr
Ramaciotti, W. S., Nebraska City
Stonecypher, D. D., Nebraska City
Weekes, Thomas, Nebraska City
Zimmerer, Chas. G., Nebraska City
—15

PAWNEE
Anderson, A. Byford, Pawnee
Boyer, W. R., Pawnee
Harman, L. D., Table Rock
McCrea, E. L., Table Rock
Prendergast, J. F., Steinauer
—5

PHELPS
Baker, K. C., Holdrege
Brewster, F. A., Holdrege
Clark, Guy W., Bertrand
Long, Rachel A., Holdrege
Magill, J. L., Holdrege
Palmer, K. P., Holdrege
Peterson, Theo., Holdrege
Shreck, W. A., Bertrand
Sundbury, P. A., Holdrege
Wilcox, Malcolm B., Holdrege
—10

PLATTE
Abts, A. W., Humphrey
Allenburger, C. A., Columbus
Anderson, R. C., Columbus
Bald, A. A., Platte Center
Campbell, Chas. H., Columbus
Cyphers, F. B., Duncan
Elston, Harry, Humphrey
Evans, C. D., Jr., Columbus
Evans, Carroll D., Columbus
Evans, J. N., Columbus
Evans, W. S., Columbus
James, Maurice C., Columbus
Koebbe, E. E., Columbus
Lemar, F. A., Columbus
McGowan, P. H., Columbus
Martyn, D. T., Jr., Columbus
Meyer, J. E., Columbus
Morrow, F. H., Columbus
Neumarker, W. R., Columbus
—19

POLK
Blum, A. A., Shelby
Anderson, C. E., Stromsburg
Brillhart, C. G., Shelby
Eklund, H. S., Osceola
LeMar, C. L., Osceola
Smith, D. J., Osceola
Williams, J. B., Polk
—7

RED WILLOW
Brimmer, K. W., McCook
DeMay, G. A., McCook
Dewey, C. E., Danbury
Easterday, E. M., McCook
Farrell, Henry, McCook
Hill, Stanley, McCook
Knox, W. E., McCook
Leininger, E., McCook
MacKechnie, W. D., Indianola
Mills, B. I., Maywood
Morgan, D. H., McCook
Mousel, L. H., Cambridge
Reed, R. R., McCook
Willis, J. M., McCook
—14

RICHARDSON
Bozarth, E. P., Humboldt
Burchard, H. D., Falls City
Cooper, James R., Falls City
Cowan, S. D., Falls City
Egermayer, Geo. W., Shubert
Gillispie, J. C., Falls City
Greene, J. M., Falls City
Hays, E. R., Falls City
Heim, Harlan S., Humboldt
Henderson, R. G., Falls City
Hustead, C. L., Falls City
Lang, O. F., Falls City
Lennemann, E., Dawson
Meadler, C. A., Verdon
Miner, H. R., Falls City
Shepherd, Wm., Rulo
Shook, W. E., Shubert
Waggoner, J. A., Humboldt
Wilson, M. L., Falls City
—19

SALINE
Blattspieler, A. C., Tobias
Conrad, Alexander A., Crete
Hamilton, F. T., Friend
Hein, Henry, Wilber
Johnson, R. K., Friend
Kirchman, R. C., Wilber
Joyner, Nevill, Friend
Panter, Robt. C., Dorchester
Simecek, Joseph, Swanton
Stejskal, F. J., Crete
—10

SAUNDERS
Drake, Robert J., Mead
Dodd, C. Q., Weston
Hervert, J. Wm., Valparaiso
Hubenbecker, J. C., Morse Bluffs
Kasper, J. E., Prague
Lathrop, M. E., Wahoo
Lauvetz, Jos. F., Wahoo
McCaw, F. W., Colon
Noyes, Wm. W., Ceresco
Tornholm, Frank, Wahoo
Way, C. W., Wahoo
Way, Frank E., Wahoo
—12

SCOTTS BLUFF
Asa, A. L., Morrill
Collin, F. M., Mitchell
Cooper, A. L., Scottsbluff
Doher, T. L., Bayard
Dunham, L. H., Scottsbluff
Franklin, W. S., Scottsbluff
Gentry, Wm. J., Gering
Griggs, Earl E., Scottsbluff
Hart, G. E., Lyman
Harvey, Walter Carlton, Gering
Hodnett, W. P., Scottsbluff
Malott, Ralph J., Scottsbluff
Mitchell, Edw. Jos., Scottsbluff
Nichols, Edwin, Scottsbluff
Phipps, John A., Scottsbluff
Plehn, F. W., Scottsbluff
Pugsley, G. W., Bayard
Rasmussen, N. H., Scottsbluff
Riddell, Ted E., Scottsbluff
Ross, A. J., Jr., Minatare
Priest, W. H., Mitchell
Shike, Wm. Earle, Gering
Schrock, J. B., Scottsbluff
Stoops, J. N., Scottsbluff
Van Valin, J. C., Bridgeport
Watson, C. R., Mitchell
Weyrens, J. P., Scottsbluff
—27

SEWARD
Clarke, H. D., Seward
Cummings, H. B., Seward
Doty, C. W., Beaver Crossing
DeOgny, Paul A., Milford
Diers, L. H., Seward
Hille, C. F., Beaver Crossing
Kenner, W. C., Utica
Meisenbach, J. E., Staplehurst
Morrow, B. E., Seward
Morrow, Joseph, Seward
Muir, J. G., Milford
Ragan, Lloyd, Seward
Sandusky, Wm., Seward
Wertman, H. J., Milford
—14

THAYER
Decker, R. F., Byron
Grosskopff, L. E., Deshler
McFarland, W. I., Hebron
Mountford, F. A., Davenport
Mullikin, D. B., Chester
Newell, H. J., Alexandria
Panter, S. G., Jr., Hebron
Reed, Paul A., Deshler
Saylor, H. W., Bruning
Schafer, Millard F., Alexandria
Snowden, C. C., Davenport
Westerhoff, J. G. W., Carleton
Zierott, LeRoy L., Chester
—13

VALLEY
Baird, Jos. W., Arcadia
Barta, F. A., Ord
Cram, Roy S., Burwell
Kruml, Jos. G., Ord
Langrall, C. D., D. M. M. S., Arcadia
Miller, C. J., Ord
Weekes, Chas. W., Ord
—7

WASHINGTON
Cameron, A. J., Herman
Donley, Robt. R., Blair
Geesaman, E. S. B., Ft. Calhoun
Murdock, R. J., Blair
Nielsen, Morris, Blair
—5

WEBSTER
Creighton, E. A., Red Cloud
Lewis, E. V., Red Cloud
O'Neill, S. H., Blue Hill
Pace, I. A., Guide Rock
Reed, H. S., Guide Rock
Stockman, J. W., Red Cloud
Wegman, Wm., Bladin
—7

YORK
Bell, H. O., York
Bell, J. S., York
Eckles, W. F., York
Harry, R. E., York
King, D. D., York
Molzahn, A. J., Benedict
Morris, F. S., McCool
Morrison, G. A., Bradshaw
Neville, J. W, York
Plumb, J. N., York
Root, B. A., York
Snyder, F. G., York
—12

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XIX Norfolk, Nebraska, January, 1934 No. 1

CONTENTS

Page

Complications of Pulmonary Tuberculosis, Leo A. Conway, M. D. 1

Diverticulitis, F. L. Wilson, M. D. 6

The Nutritional Factor in Tuberculosis, Victor E. Levine, M. D. 10

Carcinoma of the Rectum and Its Management, Louis E. Moon, M. D. 13

The Use of Live Maggots in the Treatment of Osteomyelitis, S. J. Carnazzo, M. D. 17

Pilonidal Sinus, J. Harold Lynch, M. D. 20

The Thyroid Gland, Max Emmert, M. D. 23

Migraine, Oliver C. Nickum, M. D. 26

EDITORIAL—

- New Year Invocation 28
- Suggestions for Scheduling Annual Meeting Programs 28
- Amebic Dysentery 30
- "Life in the Making" 31
- A Repercussion on Super Voltage Radiation 32
- Call for Papers 33
- Allergy Hint XI 33
- Allergy Hint XII 33
- Tuberculosis Hint 33

Editorial Paragraphs 33

How to Go to Sleep 34

Obituary 35

Report of the Committee on Medical Economics of the Lancaster County Medical Society 35

Tuberculosis Abstracts 37

Auxiliary News Notes 38

The Societies 38

Human Interest Tales 40

COMPLICATIONS OF PULMONARY TUBERCULOSIS*

LEO A. CONWAY, M. D.,

Colorado Springs, Colo.

We think of tuberculosis as a localized disease. In the general concept it is forgotten that it is seldom confined to the primary site of infection. It must be remembered that extension from the original focus is the rule and not the exception. Its manifestations are extremely varied and protean only muscle tissue seeming to be spared in this wide spread invasion.

Any tuberculous complication places the case in the far advanced stage according to the national classification.

Recently in the Laennec Institute in France it was found that the mortality in far advanced cases of tuberculosis is as high as it was 100 years ago, and these findings have been corroborated in the United States. It is, therefore, necessary that we recognize and treat complications early, and in this field lies our greatest *call to arms.* The original focus still claims too much of our attention and the unrecognized complicating spread frequently causes the death of our patient. With these facts in mind let us attempt to analyze the frequency and location of the most common complications.

In 2078 cases of primary pulmonary tuberculosis treated in Glockner Sanatorium, Colorado Springs, during the last 10 years it was found that rarely were the lungs alone affected and that neighboring or remote tissues were implicated by extension or metastasis.

---

*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

TUBERCULOUS COMPLICATIONS

Pleuritis, while generally considered an invariable accompaniment of pulmonary tuberculosis, was present in 64 cases, twelve of these had effusion and 37 had empyema while under observation. All of these cases present no difficulties of diagnosis and usually respond to treatment although they may impair the general outlook of the patient if not recognized and treated early. Spontaneous pneumothorax occurred in five patients. It is generally reported in 5 to 10 per cent of patients with active pulmonary disease. Immediate recognition and treatment is imperative or death may ensue. Usually the repeated removal of air is quickly followed by closure of the rupture. Most frequently the advanced or latent cases have sufficient adhesions to prevent this accident and it not infrequently occurs in the active case while the patient is at rest in bed. Bronchial fistula occurred in nine patients all of which were pneumothorax cases. This is a serious complication and is seldom closed.

Passing to the upper respiratory tract the larynx is the most frequently involved and was present in 155 patients. This frequency is attributed to excessive cough and constant bathing of the cords by tubercle bacilli from the active lung. Hoarseness as an initial symptom should be considered for the safety of the patient as meaning laryngeal involvement and the voice be rested until certain of the diagnosis. The pharynx was involved in 7 cases, all due to an extension from the larynx. Tonsils were tuberculous in 20 patients. the diagnosis, except in one case, being made by microscopic section after removal Tuberculosis of the tongue was not present in this series, but occurs occasionally. The cervical lymph nodes were tuberculous in 26 patients. Otitis media caused by the tubercle bacillus infection was present in 26 cases. This is a troublesome complication frequently causing considerable distress and is followed by permanent impairment of hearing. Pain which accompanies acute otitis media is not usually present. Any otitis media in the tuberculous should be referred to a specialist at once since the diagnosis is often difficult and the treatment requires experience. Tuberculous meningitis occurred in 15 patients and was proven by finding tubercle bacilli in the spinal fluid or by autopsy. It usually is a part of a miliary spread. Any evidence of delirium no matter how mild or transient should arouse the suspicion of the physician that meningeal involvement may be beginning.

Tuberculosis of the stomach is rare and was present in only one case, recognized as an ulcer but not tuberculous and was proven by autopsy. The lesion consisted of a single large ulcer located in the pylorus. The most significant factor was the intractable pain not relieved by medication except opiates.

Intestinal tuberculosis was diagnosed in 136 patients. We are in no way indebted to our diagnostic skill for the knowledge that intestinal tuberculosis is the most common complication of pulmonary tuberculosis. This information has been gained almost exclusively from the pathologist who finds this lesion in from forty to ninety per cent of such autopsies. It seems to be the general attitude of clinicians that the diagnosis of a complicating intestinal tuberculosis is almost impossible and that treatment, except in a palliative way, is unavailing. Views of this kind were long held in regard to tuberculous laryngitis. We are no longer justified in accepting such opinions.

If any progress is to be made in this field, clinicians must study these cases with an open mind. In the majority of cases some clew can be found pointing to intestinal tuberculosis if sufficient care is given to history, sequence of symptoms, condition of the abdomen, effect of a carefully regulated diet, and such evidence as may be derived from x-ray examination.

Generally three types of intestinal lesion are desscribed but I shall consider only the hypertrophic and ulcerative forms. These lesions are found most frequently in the terminal ileum, cecum, and rectum. Omitting from consideration disseminated terminal infection, the progress of intestinal tuberculosis is usually slow and no startling evidence of its presence need be expected. Any case of pulmonary tuberculosis which does not improve after six months of properly directed treatment should arouse the suspicion that an intestinal lesion exists because of its frequency and latent symptoms, and vigorous effort should be made to confirm or exclude this possibility. Not much need be expected from a survey of the temperature curve. Persistent low grade temperature extending over a period of months, either with or without periods of exacerbation, may be due to the development of an intestinal lesion, but no great value should be attached to fever unless accompanied by other significant symptoms.

Gastro-intestinal symptoms are of great importance and I have never found intestinal tuberculosis at post-mortem which had not shown significant evidence of this character during life. Any gastro-intestinal disturbance should particularly bring this possibility to mind. Past history as to appetite, habits of eating, occurrence of distress or pain in the abdomen should be taken in every case.

Diarrhea was formerly considered the cardinal symptom of ulceration, but in recent years it has been thought to be misleading and not of diagnostic importance. I cannot agree with this opinion. Any evidence of intestinal irritation must be given careful attention. One of the striking things in this connection is the fact that patients with pulmonary tuberculosis who were habitually constipated before they became ill, deny diarrhea and boast of the regularity of the bowels, saying that they "had always required cathartics but now have from two to four soft stools daily." This, of course, must be regarded as a significant diarrhea. In advanced intestinal tuberculosis diarrhea is always aggravated by foods which leave considerable residue, such as coarse vegetables. Night stools are common in this stage and are due to the fact that the bowel empties every few hours. Recurrent attacks of diarrhea, however transient, are in my opinion a very valuable aid to diagnosis. I am not unmindful of the so-called toxic diarrheas which occasionally occur in the tuberculous, but these are only transient phases unaccompanied by other symptoms and signs and are easily diagnosed.

Constipation is not of much diagnostic value and certainly does not rule out either type of intestinal tuberculosis. It is invariably present in the hypertrophic type and frequently alternates with diarrhea in the ulcerative form. This, howevr, may be due to the effect of active medication used to check the diarrhea. Abdominal distress and gas may be due to constipation.

Vomiting was noted in 64 per cent of my cases of intestinal tuberculosis. It usually occurs within thirty to forty minutes after eating or drinking, may or may not be accompanied by nausea, and is frequently little more than regurgitation of food with gaseous eructation. Emetic cough is of course not considered here. The vomitus, as a rule, is not sour but contains undigested food because of its early occurrence after eating. Gaseous eructations, or colonic flatus, or both, are usually present almost constantly during the course of the complication. The flatus and stool frequently have a lasting, offensive, characteristic odor.

Abdominal discomfort or pain, associated with gas formation and hypermotility, was present in every patient. It usually began immediately after eating and was relieved by the expulsion of gas through the rectum with subsequent evacuation of the bowel. Pain may become so severe that opiates are required for relief and may simulate acute appendicitis or intestinal obstruction.

Anorexia is so common in pulmonary tuberculosis that it cannot be given much consideration as a symptom of intestinal disease, yet there is such marked aversion to certain foods or classes of foods when a lesion is present that this aversion is not without diagnostic significance. It is sometimes almost impossible to compel these patients to eat because they find so much fault with their food.

Routine examination of the abdomen should be considered almost as important in pulmonary tuberculosis as examination of the chest. The abdomen may be distended with gas or fluid—the latter when peritonitis is present. Tenderness was found in all but one of my series. It may be localized or general, but the usual point of tenderness is over the right quadrants particularly in the region of the cecum. Sometimes the abdominal wall is quite sensitive; in other cases moderate or deep pressure must be employed to bring this out. Some muscular resistance is usually present but this can almost always be differentiated from the rigidity of an acute appendix. Masses may be present in both ulcerative and hypertrophic type. They are doughy, or tube-like in consistency;—repeated examinations will differentiate them from fecal accumulations.

In my experience x-ray examination of the gastro-intestinal tract has been disappointing as an aid in recognizing intestinal tuberculosis. Intestinal lesions are important from the standpoint of early diagnosis since good function of the intestinal tract is essential to proper metabolism and nutrition in the tuberculosis patient. Phototherapy has gained wide favor in the treatment and probably yields the best results of present day measures. Today many men are enthusiastic in prognosticating recovery from even severe intestinal lesions.

Tuberculosis of the appendix was found in eight patients and frequently occurs with an intestinal tuberculosis. Specific diagnosis is practically impossible before removal. Peritonitis secondary to a tuberculosis focus located in the abdomen or resulting from lymphogenous or hematogenous spread was not found. Formerly the literature on this subject reveals it occurred in from five to six per cent shown by autopsy. I have seen tuberculosis peritonitis only with far advanced intestinal lesions. It is very favorably influenced by injections of oxygen into the peritoneum.

Ischio-rectal abscess and rectal fistula due to tubercle bacillus infection were present in 27 patients. It was once thought that these conditions were indicative of tuberculosis elsewhere, but a review of the literature presents the widest divergence of opinion. Probably three to five per cent of all ischio-rectal abscesses and rectal fistulae are tuberculous.

The genito-urinary tract was invaded in 28 and the kidney alone in 14 patients. The incidence of genito-urinary infection is about the same as laryngeal tuberculosis. Involvement of this tract is usually readily recognized and responds fairly well to treatment. The tendency to get away from surgery except in kidney tuberculosis is increasing. Photo-therapy gives marvelous results in both a palliative and general way.

Bone and joint tuberculosis is being seen less frequently of late years and this is attributed to the decline in bovine infection. Bone tuberculosis occurred in 23 patients, and in 10 patients joint complication was present. It is interesting to note that all of the joint cases were sacro-iliac and that no other joint lesion was seen over a period of 10 years. Fixation and photo-therapy usually lead to rapid involution of the affected area.

Tuberculosis of the eye was recognized and treated in only one patient. In spite of the fact that volumes on tuberculosis fail to mention eye involvement it occurs in a variety of forms. Tuberculin in treatment has fallen into disuse but still offers the best results in the experience of many eye specialists.

There are rarer complications which were not seen and yet should be mentioned in this consideration. In spite of the recent literature tuberculosis of the pericardium is probably more often secondary than primary. Many of these cases described as primary because the oldest lesion seemed to be in the pericardium does not prove an original infection and an overlooked focus was probably present elsewhere.

Tuberculosis of the adrenal, Addison's disease is not seen frequently, may be primary or secondary, is characterized by bronze pigmentation of the skin and is usually progressive. Recently Eschatin and Cortin have been offered for treatment.

NON-TUBERCULOSIS COMPLICATIONS

These must not be confused with associated diseases but should be considered as diseases frequently resulting from the effect of the Tubercle bacillus on tissues of the body.

Asthma was found in 21 patients and contrary to general opinion is not infrequent with Tuberculosis. Confusion of diagnosis arises when extensive fibrosis causes attacks of dyspnea which simulate asthma. Since mixed infection is considered a constant accompaniment of pulmonary tuberculosis allergic sensitization to these non-tuberculous organisms is possible. The sputum of an asthmatic patient should always be examined and even when the physical findings are negative the tubercle bacilli may be found. This combination is difficult to treat and in severe asthmatics the Tuberculosis usually is progressive.

Diabetes occurred in 14 patients with tuberculosis. Diabetes is thought to predispose to tuberculosis and the two disease are commonly found in the same individual. Present methods of diagnosis make the recognition of both within the scope of every physician. Before the days of insulin these cases offered a difficult problem in treatment but now the patient has a reasonable chance to combat these two major diseases.

Carcinoma was also thought to be rare with tuberculosis and only occurred in four patients, but is more common than this series of cases would lead us to believe. Cancer developes in healed fibrous tuberculous lesions, but probably rarely with active tuberculous lesions. I have seen in another institution a patient who had a cervical gland removed on one side which showed carcinoma and one from the other side which showed tuberculosis, both by microscopic section. The diagnosis offers the same problems as either disease alone and the treatment, of course, is unavailing.

Bronchiectasis, contrary to text book authors, seems to occur or is increasing in frequency with tuberculosis. Bronchiectatic cavities are seen with chronic fibroid tuberculosis at autopsy. Both being in the lung a problem of differential diagnosis is present, which may be difficult to establish. Mention of mixed infection of the lung has been made and the ideal combination seems to obtain here. These cases present more wheezing, coughing, and mixed sputum than others. The quantity of sputum IV, VIII, or XII ounces daily is suggestive. In treatment expectorants postural drainage and treatment of existing sinus disease is indicated. I have seen many patients who had large quantities of sputum not caused by extensive tuberculosis respond well to treatment of the complicating bronchiectasis by the above mentioned measures.

Cardiac complications are seen in the terminal stages of a vast number of tuberculous patients. Dyspnea is more often cardiac than respiratory in fibroid cases. Theoretically every scar and even the smallest adhesion increases the heart load. The myocardium refuses to respond to treatment having been exhausted from the long toxemia. Cardiac death is frequently reported in the chronic tuberculous because the symptoms dominate the picture.

Amyloid kidney disease is more common than other types of nephritis. Fifteen of this series presented amyloid change during life and at autopsy all of these patients showed amyloid change in other organs. It perhaps is no more frequent than with other chronic conditions but due to the prolonged course of tuberculosis is more commonly observed. I have found it more frequently with empyemas which were not drained early.

Psycho-neurosis and neurotic manifestations are probably major factors in preventing recovery in tuberculosis more than in any other disease. The tuberculous patient has to follow an unchosen calling for which he is not prepared. He has full use of all of his faculties and yet finds only hopelessness in trying to adapt himself to new pursuits. The psychic balance found in a normal life soon leaves especially the more intelligent and the physician finds himself in a dilemma to offset these functional disorders. To my mind the problem is only partically met in sanatoria for the tuberculous and seldom if ever at the patients home. Perhaps the best method of combatting failure in this direction is to outline a schedule providing occupational therapy, diversion and study along lines suitable to the individual training. This program must be instituted immediately when the diagnosis is made since patients are similar to inadequately trained students and they soon get beyond control. Morbid hopelessness is born during inactive hours of consciousness and resulting insomnia is the beginning of a dangerous train of psycho-neurotic symptoms. In our penal institutions it is a well known fact that even the far advanced cases of tuberculosis get well. There they are confined under military discipline with no particular medical direction except occupation. Based upon these principles with modification, of course, our sanatoria could probably render a greater service to our patients. In passing I must mention that radio has contributed largely to entertainment of the tuberculous.

SUMMARY

The uncomplicated case of pulmonary tuberculosis is undoubtedly much easier to treat and offers a much better prognosis.

It is my belief that early recognition of the complications either tuberculous or non-tuberculous is imperative. If early recognition of the complications of tuberculosis can claim the attention of the medical profession the mortality rate should be reduced.

In order of frequency the intestine, larynx and genito-urinary tract presents most of the complications.

Sanatoria for the tuberculous should provide for suitable occupation, diversion and opportunity for study.

The disease tuberculosis still wages relentless war among our people. Although the mortality rate has been reduced 65 per cent in the last 30 years tuberculosis is still the leading cause of death between the ages of 15 and 45 years. An offensive drive launched against our complications may minimize the enemies position in the disease world.

DISCUSSION*

MAX FLEISCHMAN, M. D. (Omaha): I want to compliment Dr. Conway on his instructive paper. I have on several occasions made studies of small groups of tuberculous patients, from fifteen to fifty patients in each group, and from the amount of effort required for that small number of cases, I can assure you that a study of over two thousand cases must have been a gigantic task.

Yesterday afternoon Dr. Arrasmith, in discussing Dr. Conlin's paper, spoke of the difficulty in diagnosing cancer in its early stages. The same may be said of tuberculosis. Frequently the patient with pulmonary tuberculosis fails to consult his family physician until symptoms of a complication develop. Consequently it is up to the family physician to be on the alert and recognize the underlying cause in back of these symptoms. If treatment is started in the early stages, with the regular regime for the treatment of tuberculous patients, plus the special treatments outlined by Dr. Conway, relief of symptoms may be obtained in many of the cases and some of the patients may be cured.

Dr. Conway has discussed the subject of intestinal involvement so well that little need be added. I might emphasize the value of fluoroscopy during the x-ray examination of the gastro-intestinal tract. Some things are brought out by this means which do not show up on the x-ray plate—for example, tenderness over a certain area of the bowel which fails to fill perfectly with barium.

The cases I have seen with enterocolitis which have come to autopsy agree with those in Dr. Conway's series in that only a few had an accompanying peritonitis.

Most of the cases of laryngitis that I saw were mild, or moderately advanced. When the involvement is extensive, it is one of the most painful and serious complications seen in medicine.

---

*Through mischance we are unable to give here Dr. F. W. Heagey's interesting discussion.

The outstanding symptom in the cases with meningitis is almost constant headache. When the complication has existed for some time, morphine is the only thing that will relieve the headache.

The great majority of our cases, at some time or other, particularly in rainy weather, had some pain in the chest, usually increased by deep inspiration, and accompanied by a slight elevation in temperature. Also in a great many cases coming to post, we would find over the involved lung a greater or less amount of pleuritic adhesions. Consequently I feel that the incidence of pleuritis was greater in our cases than in Dr. Conway's series.

Spontaneous pneumothorax is a very serious complication. The cases that recover, I believe, are those which do not develop a pleural effusion, which changes to an empyema. The diagnosis is not difficult if one bears the condition in mind. The extreme dyspnea and tachycardia, the marked hyperresonance over the involved side, the displacement of the mediastinum, particularly the heart, to the opposite side, and the tense, anxious expression on the patient's face, all make a picture easy to remember.

In Dr. Conway's cases, joint involvement was limited to the sacro-iliac joint. We had two cases in which the knee was involved, one case unilateral and one case bilateral, and one case in which the interphalangeal joint of a finger was involved.

The cases of pulmonary tuberculosis complicated by asthmatic bronchitis are sometimes benefited by tuberculin treatment. A severe strain is put on the heart in some of these patients, and digitalis is sometimes of benefit in relieving their symptoms.

Bronchiectasis was commonly present in chronic cases. If you see a case with marked clubbing of the fingers, suspect bronchiectasis.

Amyloidosis was also common in the chronic cases. In some cases the liver was so extensively involved that the enlarged liver reached down to the brim of the pelvis.

The cases with diabetes that we had were severe, and not benefited much by insulin.

An important point is the prevention of a psychoneurosis. A patient who is not well enough to go home, and not sick enough to require rest in bed most of the time, must have something besides books and the radio to occupy his mind and keep up his morale. When conditions improve, we hope to pay more attention to this phase of the treatment, by means of occupational therapy.

I again wish to compliment Dr. Conway on his excellent paper.

DR. CONWAY, (closing): I want to thank you for the discussion, and also for the opportunity of coming from a neighboring State to address you.

DIVERTICULITIS*

F. L. WILSON, M. D.,
Stuart, Nebraska.

Although for a great many years diverticula have been known to exist in the bowel, only in recent times has the condition attracted attention. This is due in part to the scientific work of Mummery, Telling and Gruner, Spriggs and Marxer, the Mayos and others, and to the marked advance made in roentgenography.

Diverticulitis is of interest to the physician, not only from the local condition it may cause, but also from the joint and muscular rheumatic infections occurring in persons past mid-life which may, in part at least, be due to infected diverticula. To the surgeon it is of particular interest because of the difficulty of satisfactorily meeting the problems which may arise in acute conditions or the resulting complications.

Both physician and surgeon in reflecting upon their cases occurring over a period of several years will recall instances of mistaken diagnosis of this disease. This is no discredit to their ability but emphasizes the difficulty, often times, of making a correct diagnosis.

Diverticula may occur any place in the alimentary tract. It is not entirely rare to find them in the esophagus and stomach. Cases have been reported of diverticula of the duodenum and of the jejunum. They are, however, found most frequently in the descending colon and sigmoid. They are congenital or acquired. In many instances there is an embryologic reason for their existence. Meckels' diverticulum of the ileum is an example of congenital diverticulum, which occurs with moderate frequency, and which is due to the persistence of the proximal portion of the omphalo-mesenteric duct.

The appendix is the best known example of a congenital diverticulum of the bowel. It may even present secondary diverticula from its lumen. The real interest, however, is not in their origin but in their termination. As long as they do not undergo secondary changes they are quite symptomless and harmless.

Diverticula of the bowel most frequently occur after forty years of age, often in obese individuals who are afflicted with constipation. The condition is more common in the male than in the female and exists more frequently than is appreciated. In the earliest stage the symptoms may be so vague that they are usually assigned to a simpler pathologic condition.

A prediverticular state of the bowel has been described which occurs chiefly in the descending colon and sigmoid. This is probably due to bac-

---

*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

terial invasion of the bowel wall from some foci of infection or a septic condition of some organ. On x-ray examination, the colonic wall is found to be irregular, in a portion or in the whole of its circumference, interfering temporarily with haustration and segmentation. By this irregularity a weakening occurs, giving rise to small hernial protrusions. These are situated between the longitudinal muscles at the entrance or exist of small blood vessels. These small protrusions at first contain all coats of the bowel, but in time the muscular coat becomes atrophic and may entirely disappear, due to pressure within, and constipation. These small pouch like protrusions may be present in large numbers. They occur chiefly in the sigmoid and as time goes on increase in size. The condition at this stage is known as diverticulosis.

Fecal matter works its way through the necks into the pouches and stercoliths form which are hard and cannot get out. Even foreign bodies find their way into them.

Bacterial invasion and disturbance of circulatory and lymphatic vessels causes an inflammation around the pouches and diverticulitis occurs. Contraction takes place around the diverticula and crescent or pear-shaped pouches form which become closed off at the neck. Haustration and segmentation is lost, rendering the part immobile with a contraction of the lumen of the bowel.

Diverticula high in the intestinal tract may be present for years without giving rise to any trouble because the contents are fluid or semi-fluid. In the colon the condition is different. The contents, especially of the lower part, lose the semi-fluid character, due to stagnation, impaction occurs into the lumina of the diverticula which may be present. Because of the loss of the muscular coat in the diverticula the fecal content cannot be expelled through the bottle-necked opening into the bowel. The condition is aggravated by constipation and an increased bacterial content. It is easy to understand, therefore. why various forms of inflammatory conditions may arise in relation to diverticula of the colon and sigmoid which may be confused with conditions such as appendicitis, perinephritic abscess, salpingitis, oophoritis and neoplasm.

Pathologically the condition presents a variety of clinical pictures. In the earliest stage, regarded as that of diverticulosis, there is little beyond the presence of small uninfected or slightly infected diverticules, which may at times contain fecal material which usually does not escape. Without actual infection there usually is little disturbance unless it be from fecal plugs. These may be responsible for vague attacks of recurrent colonic spasm, flatulence and abdominal discomfort.

As the condition advances, there is in addition to the plugged diverticula, a more active infection. These minute inflammatory foci may go on to abscess formation, converting the diverticula into pus sacs which discharge at times into the lumen of the bowel, only to reform later. In this instance the abdominal discomfort is not only increased, but there are febrile attacks of slight or severe character. If the inflammatory process is sufficient to swell the colon or sigmoid a tumor mass may be palpable which disappears when the inflammatory process subsides.

When the infective process has passed beyond the confines of its original location, a number of conditions may arise, with varying degrees of risk.

A more or less localized peritonitis may be produced. This may simulate any condition characterized by a local peritonitis such as appendicitis or salpingitis, and may be caused by infection spread through the bowel wall or by a rupture of a diverticulum.

Abscess formation may occur in a direction other than peritoneal. These may be single or multiple and point or even open on the lower part of the abdomen. The abscess can extend retroperitoneally causing a perinephritic abscess. This in turn may burrow in various directions and discharge into the kidney pelvis or the ureter or even into the bladder, uterus or vagina.

The most serious complication is the perforation of a diverticulum or peri-diverticular abscess into the peritoneal cavity. This is a most grave condition and, happily, occurs but rarely.

A more advanced condition of diverticulitis is marked by the progressive development of intestinal obstruction, which may become very severe in character.

This may be due to stenosing of the lumen of the bowel or from adhesions from a peri-diverticulitis. Obstruction may be associated with a palpable tumor mass which is often difficult to differentiate from a new growth. even at operation. The history is not unlike that of neoplasm for there is increasing difficulty with the bowels, with periods of diarrhoea alternating with constipation, mucous, and even small quantities of blood is occasionally found in the stool.

It is further characterized by attacks of recurring abdominal distension with difficulty in passing flatus.

The differential diagnosis is aided by infrequent bleeding, absence of cachexia and a history of recurrent febrile attacks over a period of several years. The tumor of diverticulitis is usually more tender and less fixed than that of a malignant growth.

Finally, it is held by Mayos and others that diverticulitis very often forms an antecedent stage to carcinoma of the bowel—particularly the sigmoid and pelvic colon.

The symptoms of diverticulitis vary, therefore, with the pathological condition present. In the peri-diverticular state there is usually a dull aching pain in the abdomen, below the navel and to the left side, which is not relieved by medicine. These attacks recur frequently and are associated with flatulence and constipation. Often these symptoms are overlooked or are assigned to dietary indiscretions and the like. These vague symptoms occurring in the left abdomen are not apt to receive the serious consideration which they would if they occurred upon the opposite side.

In acute conditions, without obstruction, the symptoms present are similar to those of appendicitis of the left side, viz., pain, nausea, and vomiting, tenderness, abdominal rigidity, elevated temperature and polymorphonuclear leukocytosis. Bladder irritability may also be present. If an abscess or a tumor mass has formed it may be palpated if the patient is not too obese.

The diagnosis of diverticulitis is often difficult because of the many conditions which simulate it. Due to the motility of the lower sigmoid, the symptoms may be right-sided, and a diagnosis of appendicitis be a justifiable error. Gynecologic conditions in the pelvis, sigmoiditis, vesicocolic fistula, carcinoma of the rectosigmoid, tuberculosis and syphilis add to the diagnostic difficulty.

Diverticulitis may be confused with colitis but in the latter disease mucus is passed in large quantities and the x-ray examination shows a clear outline of the bowel without disturbance of haustration or segmentation. Dysentery and tubercular sigmoiditis may be differentiated by an examination of the stool. In gynecological conditions a thorough pelvic examination will help to clear the diagnosis, except where a general involvement of the pelvic organs is due to disease of the sigmoid. Sigmoidoscopic and roentgenologic examinations will aid materially in ruling out malignant conditions.

The real diagnosis requires a definite clinical, pathological and radiological picture. The x-ray is especially useful in cases of diverticulosis. However, there may be many fallicies in making a correct diagnosis. If the bowel is not completely distended or evenly filled an appearance of diverticulitis may be obtained, or, if the barium mixture is too thick to enter the neck of diverticula, the condition may be missed. A barium enema is essential for barium administered orally does not completely fill the colon and no reliance can be placed upon this method. A plate taken after the enema has been expelled is of great value for it may show up diverticula, which retain barium when the remainder of the colon is empty. It is necessary to have considerable experience and care in technique to properly interpret the x-ray findings.

The treatment of diverticulitis from the medical standpoint consists in the selection of a suitable diet. One of lacto-vegetarian order with plenty of mixed, sieved vegetables or fruits is preferable. Avoidance of materials of an indigestible character that leave residue or seeds is essential. The oral administration of simple aperients, saline in character may be used as this keeps the bowels in a fluid or semi-fluid state. Paraffin oil is particularly useful. Strong laxatives should not be used at any time and massage of the abdomen should not be practiced. The most important consideration is treatment of the bowel from below by the regular and systematic administration of oily enemas. Caution should be observed as any great pressure carries with it the dangers of perforation. The amount should be small, therefore, and the irrigator held at a minimum height.

Surgically, the condition will call for interference in those cases where a diagnosis of diverticulitis has been made and in which there has been a gradual increase in symptoms, in abscess formation, perforation, intestinal obstruction and the formation of fistulae.

Where there has been a gradual increase in abdominal symptoms operative procedure may not be simple, as often the surgeon is working in a diseased bowel and the condition may be widespread. Occasionally the diverticula may be clamped off and removed without encroaching on the lumen of the bowel. Examination of the terminal portion of the ileum at the time of operation, for other chronic conditions, will sometime reveal diverticula which can often be removed with comparative safety. In some cases it may be necessary to resect a portion of the intestine with the performance of an end to end or a lateral anastomosis as may be indicated.

If an abscess has formed. drainage is, of course, indicated. This may be particularly trying if it has formed deep in the pelvis. Care must be exercised in separating adhesions, that damage does not occur to adherent or surrounding structures. In some cases a colostomy may be necessary.

Obstruction from diverticulitis is seldom complete. When it is acute interference becomes necessary. A longitudinal incision of the descending colon may relieve the acute condition and allow the diverticulitis to subside. By this measure the patient may be spared the discomfort of a permanent colostomy or a second operation for its closure. If the diverticulitis does not subside it may be necessary to convert the temporary fecal fistula into a permanent colostomy at a second operation.

In some acute conditions it may be possible to do a short circuiting operation. The difficulty will usually be in getting sufficient of the pelvic colon distal to the diseased bowel to permit of union with the colon proximal to the affected portion.

Repair of fistulae between diseased bowel, uterus, bladder or vagina is obviously a difficult procedure. It means, as a rule, intestinal resection, closure of perforations and restoration of the intestinal tract. As this must be carried out in the midst of infection there is necessarily great risk to the patient from leakage, infection, and shock. It will probably be necessary to perform a colostomy a few weeks previously.

Perforation is one of the gravest complications. The bowel at the site of perforation is so fragile that closure may be impossible. Tacking one of the appendices epiploicae over the opening may be the better procedure. When possible the loop of the bowel should be made extra-peritoneal. This may be accomplished by bringing the affected loop through the omentum or by sewing both margins of the peritoneum to the meso-sigmoid. The bowel should be drained by a caecostomy or by a colostomy.

In the chronic form of diverticulitis with tumor formation, operation most often must be performed as would be done for malignancy of the sigmoid.

Summarizing the present knowledge of diverticulitis, one is impressed with the fact that it is a fairly common disease. This pathology must be considered in all digestive tract conditions, both acute and chronic, that are accompanied by abdominal distress, but particularly in those presenting left-sided pain and tenderness. It is most frequently diagnosed accidentally while correcting another intra-abdominal condition, or during an exploratory section.

Increasing knowledge of abdominal pathology has made the disease an important clinical entity. The x-ray is of great assistance in locating and classifying the various stages of diverticulitis. In chronic or subacute cases prolonged and careful observation will give, not only a proper understanding of the area involved, but the procedure best suited for the particular type of case.

The medical treatment of diverticulosis and chronic diverticulitis is well worth while even though surgical intervention may ultimately become necessary. An increased understanding of the condition will, no doubt, offer more in the way of prevention, but at present we must be satisfied with more careful differential diagnosis. early medical treatment when possible and effective surgical intervention in acute conditions or the complications from them.

BIBLIOGRAPHY

Kramer, Samuel E., and Robinson, William: Acquired Suppurative Diverticulitis with Pylephlebitis and Metastatic Suppuration in the Liver. Surg. Gyn. and Obst. 42: 540 (April) 1926.

Wooly, A. E. Mortimer: Some Aspects of the Diagnosis and Treatment of Diverticulitis: The Post-Graduate Medical Journal, 7: 31-34, (December) 1931.

Auvray: Diverticulitis of the Transverse Colon, Inflamed, and Perforated Between the Two Laminae of the Mesocolon, Bulletins et Memoires de la Societe de Chirurigie, 56: 1350-1351 (December) 1930.

Warren, Richard: Diverticulitis, Practitioner, 121: 117-120 (August) 1928.

Monsarrat, K. W.: The Surgical Treatment of Diverticulitis, The British Medical Journal, 3523; 41-43 (July) 1928.

McKendrick, J.; Souttar, Kerr; Munro, J. M.; Young, Archibald: Discussion of Diverticulitis, The Glasgow Medical Journal, IV; (Oct.) 1928.

Bogart, Arthur H.: Diverticulitis of the Intestines, With a Report of Eight Cases, Long Island Medical Journal, 19: 254-264 (July) 1925.

Lynch, Jerome M.: Diverticula and Diverticulitis, The Journal of the American Medical Association, 98: 973-977 (March) 1932.

DISCUSSION

F. W. HEAGEY, M. D., (Omaha): Mr. Chairman: This interesting resume of the subject of Diverticulitis needs little further comment except to emphasize what the essayist has brought out, very clearly. From experience with disturbances of this kind, I am convinced it is a medical and not a surgical disease. When it assumes surgical proportions, it has gone into the realm of the surgical abdomen. In times past, as you know, many cases of diverticulitis of the colon have been operated for cancer of the colon, and an attempt made to remove it, and pathological section revealed absence of any tendency toward cancer.

The most serious symptom is that of obstruction. I have never seen a case of absolute shut-down. I have seen plenty of them. When you get this condition the essayist has described, in the older type of individual, probably the first thing you should think of is a disturbance of this kind. Its treatment is smooth diet and introduction of some mineral oil, preferably by mouth, hot packs, and particularly colon irrigation, inducing repeated action of the bowel until the mass has settled down.

History of an acute infection, followed by pain of the abdomen and rigidity, should make you think of an infectious process, rather than a neoplasm. I think the burden of proof rests on the physician to prove it is not a diverticulitis, rather than to think of a neoplasm.

Assuming a diagnosis of neoplasm is made, before surgical intervention is undertaken, I believe these patients should have prolonged medical attention in an effort to allow the infection that may be connected with the neoplasm to subside. I think we should not attempt a laparotomy until the leukocytosis and the acute signs have had a chance to disappear. I believe our mortality, as far as laparotomies are concerned, will be markedly reduced.

DR. WILSON, (closing): I thank Dr. Heagey very kindly for his discussion. I have nothing further to add at this time.

THE NUTRITIONAL FACTOR IN TUBERCULOSIS

VICTOR E. LEVINE, M. D.,
Department of Biological Chemistry and Nutrition, Creighton
University School of Medicine,
Omaha, Nebraska.

Tuberculosis is the most frequent and the most widespread of all the major infections. It still is the "great white plague". The toll exacted by the disease falls heaviest in the earlier years of life, the period of greatest usefulness. The latest volume on mortality statistics published by the Department of Commerce gives 88,352 deaths from tuberculosis for the year 1929, or 76 for every one hundred thousand in our population. Still later reports are available. In 1932 The Metropolitan Insurance Company gives the death rate for tuberculosis as 63 per one hundred thousand. This rate is equivalent to 76,638 deaths from this disease.

Some investigators claim that the number of cases of clinical tuberculosis in a community may be estimated by multiplying the number of deaths from tuberculosis by twenty. Other investigators, more conservative, employ ten as a factor. We can therefore state that there are from 800,000 to 1,760,000 people in this country alone afflicted with this disease. In spite of the great progress in the reduction of morbidity and mortality, the disease as evidenced by the tuberculin test is still present in an approximate average of 50 per cent of individuals in early adolescence in various communities of the United States.

Tuberculosis is a man-made disease and therefore humanly preventable. It is a disease of cattle not on the range, but in barns; of birds not in nature, but of chickens in coops; of monkeys not in the jungles, but in the zoos; of human beings not in the great wide open spaces, but in houses, breaking the simple hygienic laws relating to sunshine and food, to fresh air and pulmonary ventilation, to exercise and work, to rest and relaxation, to emotional and mental composure. It is a disease of modern living, which frequently entails living against natural law. It is a disease too often due to an existence weighed down by the physical, mental and emotional shackles of poverty, with its disease-producing and resistance-lowering allies, poor food, poor housing, overwork, overcrowding, darkness, worry, neglect and anxiety.

Adequate and balanced nutrition depends upon two factors, one exogenous and the other endogenous. The exogenous factor is the food intake; the endogenous factor is metabolism. Malnutrition may be brought about by an unbalanced food intake. It may also be brought about by a diet which under ordinary circumstances leads to no symptoms, but which is relatively inadequate because of the failure to supply an increased need of the organism to meet an extra demand. This extra demand may be produced by physiological or pathological stresses and strains. Physiological stresses and strains are encountered in growth, in adolescence, in pregnancy and lactation, and in physical work. Pathological stresses and strains are encountered in disease processes, such as infection, in overwork and in rigorous climatic conditions.

Stress and strain demand a proportionately greater intake of certain dietary essentials. Growth, adolescence and pregnancy require a relatively greater calcium, iodine and vitamin intake. Recovery from the pathological stress and strain of disturbed metabolism is known to require a relatively greater intake of certain vitamins. Excessive physical labor and severe weather also make increased demands on the organism. Arctic explorers come down with scurvy in winter on a diet that does not induce this deficiency disease in warmer months. Philippinos doing hard manual labor may develop beriberi on a diet poor in the antineuritic vitamin, while others doing very light work show no visible signs of this disease on the same type of nutritional deficiency. In the above statements we find the reason for strikingly few deficiency diseases during the depression among our unemployed, many of whom have been forced to subsist on a very meager and deficient diet.

An inadequate diet may support life fairly well though not at its optimum when the individual is free from stress and strain. These if present increase the relative requirements of the organism for certain dietary essentials, such as vitamins. Inadequacy in diet therefore manifests its severest symptoms and plays its greatest havoc when an individual is under physiological or pathological stress and strain.

The most important contribution to the science of nutrition to human welfare lies in the recognition that faulty food induces greater susceptibility to infection. Faulty food coupled with stress and strain may induce a still greater lowering of resistance. These facts assume great significance when we bear in mind that malnutrition is very prevalent and that the present way of living is strenuous and subject to all sorts of stresses and strains.

Tuberculosis has been designated as a disease of poverty. Poverty not only makes for malnutrition, but the stress and strain it produces adds to the severity of the symptoms of malnutrition. Poverty buys poor and insufficient food, abides where housing facilities are inadequate in space and deficient in ventilation and natural lighting. Poverty works too many hours and enjoys too little rest and relaxation. Poverty exists in a precarious way from a day-to-day fashion and is ever anxious and worried about the immediate future. Poverty lowers resistance to infection. Prosperity buys good food, indulges in rest and recreation, has plenty of sunshine at its disposal. It brings relief from many little inconveniences and worries. Prosperity raises the resistance to infection. Little impression has as yet been made upon the gross amount of tuberculous infection. Before any further considerable decline in the mortality rate can be expected, we must improve the social and economic conditions of the mass of the population.

Tuberculosis has long been suspected to be an infection superimposed upon a condition of malnutrition. The relation of this disease to diet has been emphasized by many clinical investigators. Bartlett maintains that the most common pathological conditions accompanying children with marked loss of appetite are septic tonsils and adenoids, pyelitis, dental caries and tuberculosis. Sill made a study of 1000 New York primary school children between the ages of six and twelve. Of this group 40 per cent of the pupils were considered malnourished, and among these 4.5 per cent were found to have tuberculous adenitis. Sill made another study of 210 exceedingly malnourished children. In this special group 75 per cent had enlarged cervical glands, and of 210 tested for tuberculosis 55 gave a positive von Pirquet. Among other investigators who find a close relation between diet and tuberculosis may be mentioned Thomas and Hornemann, Renon, Burns, Muthu, Stölzner, Chadwick, Donnelly, Levinson, Emerson, and Sherman.

Faulty food leads to greater susceptibility to infection. This infection usually involves the upper and lower respiratory tract. This pronounced characteristic of faulty nutrition, is exemplified in the findings of Flemming, Macauley and Clark, who reported in South Rhodesia epidemics resulting from a diet leading to mixed avitaminosis. The symptoms of dietary deficiency were evident in 100 out of 700 laborers. Vaccine therapy failed to stop the ravages of infection. The number of deaths for 1908 in 2,251 cases was 686. Not an inconsiderable portion of these mortalities was due to tuberculosis, pneumonia, and meningitis. When a change was made in the diet, the symptoms disappeared and a decrease occurred in the incidence of infection.

The World War and the years following proved to be a gigantic involuntary experiment in nutrition. The conditions were such in Europe that faulty nutrition was very prevalent. Never before in the history of science was there so great and extensive an opportunity to test the validity of conclusions based on animal experiments. The results of this unprecedented experiment were so markedly one-sided that all recent writers and investigators agree with emphatic unanimity as to the interrelation of diet and infection.

As a result of the system of food rationing adopted by some countries and also as a result of inadequacy of food or unavailability of food, ample opportunity was afforded for the study of pathological conditions arising from undernutrition or from malnutrition. Quite a number of reports deal with the increase in tuberculosis. Lusk cites the fact that with loss of weight the disease became more frequent in Germany until at the end of the war the death rate from this disease had doubled or had reached a height which it formerly held before modern control over its spread had been originated. More new cases were enumerated, and young children became more susceptible than before. Hamburger commented upon the disastrous effects of the war diet upon children in relation to tuberculosis. Lemoine found tuberculosis so prevalent in consequence of malnutrition in Lille that in 1917 an actual epidemic of glandular tuberculosis occurred.

Severe malnutrition, it was observed during the War, altered markedly the course of tuberculosis. Under conditions of improper feeding, chronic tuberculosis, usually benign, assumed an acute form with death within two to three months. Greater frequency was also noted in the incidence of the acute miliary type of this disease as well as an increase in intestinal tuberculosis with involvement of the peritoneum and of the mesenteric glands.

Vitamin deficiencies play a significant part in the incidence of tuberculosis. Indeed, Gardey and others find that certain symptoms of tuberculosis resemble those of a deficiency disease. They are therefore very much inclined to look upon this disease as a dietary deficiency complicated by secondary infection. In beriberi many of the chronic cases are known to die from cardiac failure or from intercurrent infection, chief of which is tuberculosis. Crimm, Raphael and Schnute have observed a favorable effect upon tuberculosis as a result of an increased intake of Vitamin B concentrate and mineral salts.

Many investigators have reported an increased susceptibility to tuberculosis in vitamin C deficiency. Coland inoculated guinea pigs kept on a scorbutic diet with small doses of tubercle bacilli. He observed that the appearance of the granuloma at the site of inoculation and the adenopathy was hastened and that the extension of the lesions to the spleen was more rapid than in the controls. Gons and Gatti report one case in which reactivation of tuberculosis occurred when their patient went on a diet which was deficient in vitamin C. The latest finding is that of McConkey and Smith, who report that an adequate supply of vitamin C usually protects against ulcerative intestinal tuberculosis.

Deficiency in vitamin A, as pointed out by Wolbach and Howe, results in the substitution of stratified keratinizing epithelium for normal epithelium in the respiratory tract, in the alimentary tract, in the urinary tract, and in the genital tract, in the eyes and paraocular glands. This keratinizing epithelium is inactive biologically, since it loses its power to secrete and protect from bacterial infection. Absence of vitamin A is, therefore, characterized as a result of a secondary process by infection in all those regions of the body where keratinization of the epithelium has taken place, especially in the respiratory tract, the gastro-intestinal tract and in the apparatus of vision. In vitamin A deficiency intercurrent infections occur with great frequency. From 1909 to 1916 Denmark saw fit to export its fat-soluble vitamins in the form of butter, cream and cheese. During these years xerophthalmia increased together with many types of intercurrent infection, including pulmonary tuberculosis. When the export of butter was forbidden and when each individual was permitted 250 grams of butter per week, there began a decline in the incidence of xerophthalmia in the infant mortality, the mortality due to congenital debility in children one to five years of age, in the deaths from rickets and the deaths from pulmonary tuberculosis.

Hess and Unger also called attention to the fact that rickets predisposes to diseases of the respiratory tract. In 1917 they observed in the Negro section of New York City, 90 per cent of all the Negro children had rickets. They reported among them a mortality of 314 per 1000, in which whooping cough, pneumonia and tuberculosis ranked as the most frequent causes of death. Grant, Suyenaga and Stegeman, experimenting with white rats, decreased the calcium and vitamin D intake of the diet and caused the development in the lungs of tuberculosis, which could be diagnosed grossly and microscopically and by guinea pig inoculation. Rats receiving adequate diets before and after inoculation were immune to subcutaneous inoculation of tubercle bacilli that were four to ten times as large as the doses required to infect the animals on inadequate diets. Grant, Bowen and Stegeman lowered only the vitamin D content of the diet with the result that rickets was intensified and the susceptibility to tuberculosis increased.

Race *per se* is not a factor in immunity with reference to tuberculosis. Racial differences in susceptibility no doubt depend upon nutrition. The high incidence of this infection among the North American Indians and Negros is believed to be due to unhygienic conditions and to poor nutrition. Goldberg cites the downward trend in the mortality of the Negro as the years pass by, due to improvement in the habits of living. In New York the death rate among the Negroes from tuberculosis was 598 per 100,000 in 1911. In 1931 it was 286 per 100,000, a decrease of 50 per cent.

Climate has been exaggerated as a factor in the problem of cure and prevention. Geoghegan reported cases of tuberculosis in the West Indies, islands possessing excellent climatic conditions. He gave faulty nutrition and poverty as predisposing causes. Appleton noted a diminished resistance to tuberculosis in the men of Newfoundland and Labrador in spite of the fact that they spent half of the year out of doors in an invigorating climate. Faulty diet was also regarded as the predisposing cause of the tuberculosis prevalent in these regions.

Illustrative of the influence of diet on tuberculosis in Overland's findings with relation to the food of the Norwegian soldier. The extraordinarily high frequency of tuberculosis among garrisoned military men in Norway he considers the result of deficiencies in the diet in the absence of reasonable causes. By improving the diet by the addition of more fruit and fresh milk and by shortening the time of cooking, the authorities were able to reduce the frequency of tuberculosis.

Food, rest, and sunlight have performed marvels in the cure and prevention of tuberculosis. To cure is the voice of yesterday; to prevent, the divine whisper of tomorrow. Goldberg, in a recent article, presented a plan of prevention by means of proper nutrition. He is highly to be congratulated for his insistence upon prevention and for formulating a practical plan of dietary procedure. The spirit that prompts this ardent worker in tuberculosis may be gleaned by quoting from him directly: "The general population should be educated as to an adequacy of diet, based on a balance of proteins, fats and carbohydrates with sufficient mineral salts and vitamins. Inasmuch as a large proportion of the general population at some time before adult life is subject to tuberculous infection, the reserves of resistance should be developed and safe guarded."

In instituting preventive measures to combat tuberculosis, we must ever keep uppermost in mind that the garden, the field and the farm animal yields the prophylactics, and that the kitchen is the pharmacy in which they are prepared for administration.

(Note: Bibliography in Reprints.)

CARCINOMA OF THE RECTUM AND ITS MANAGEMENT*

LOUIS E. MOON, M. D.,
Omaha, Nebraska.

During the last ten years the frequency with which carcinoma of the rectum has been seen seems to have increased. It is difficult to say whether this increase is real or whether it is only apparent since the medical profession is becoming more expert in its methods of diagnosis. The majority of careful observers, who have made a special study of this subject, seems to think that our methods of diagnosis are better than in the past and therefore more accurate diagnoses are being made. One of the factors which would show a greater increase is in the more accurate compilation of the cause of death statistics, and it is also to be remembered that the statistics that are taken from large hospitals and clinics do not mean much as to the increase in types of diseases. The number of cases seen in the large clinics are dependent somewhat on the economic condition of the country at the time and upon the means of transportation and upon the reputation which the institution has for caring for that type of disease. In good times the people with serious ailments literally flock to the large clinics, while in depression times they remain at home, and I will venture to say that the general practitioner has seen more cancer of the rectum in the last three or four years than at any time previous in his practice, and I think he will probably see more in the next two or three years because a great many people have neglected themselves. Another factor which would seem to make an apparent increase is the fact that with improved methods of treatment a larger number of people attain the "cancer age" than formerly, that is by increasing the expectancy of the individual, there will be more people attain the so-called "cancer age." We may say that there is no definite "cancer age" since cases have been reported at fifteen years as well as at eighty-five, but we do know that the greatest number of cancers occur between fifty and sixty and that between forty and seventy we will find that probably ninety per cent of all carcinoma of the rectum occurs. Again these statistics may be somewhat unreliable because they are not based upon the number of people living per thousand at these given ages. The age of greatest frequency is slightly higher among men than it is in women. The occurrence as to sex is greater in men by the proportion of approximately three to two. The explanation of this might possibly be that most of the statistics come from general hospitals and general clinics and it is very possible that a good many women with carcinoma of the rectum will enter women's hospitals and will not be included in these statistics. The duration of symptoms before the patient sees a physician is quite significant, in fact, it seems to be a reflection upon the patient's knowledge of cancer or upon the possibility of its occurrence. Symptoms are present usually eight to thirteen months on the average before a diagnosis is made, and it is quite possible that many of these cases if seen at the onset of symptoms, could have been benefited permanently by some simple procedure. If the cases are left untreated, the usual length of life is from two to three years with an average of 26.7 months. Writers have ceased guessing at the etiology of cancer. All concede that chronic irritation is a factor in the production of all cancers and definitely so in cancer, of the rectum. Irritative pathology in the rectum and anus should always be removed either by proper treatment of the patient or by surgery. Anal and rectal polypi and rectal adenomata are the types of growths which occasionally become malignant and they should always be removed no matter how innocent appearing they may be. Hemorrhoids and fistulae have frequently been mentioned as possible causes of carcinoma, but statistics show that most of the carcinomas of the rectum are above the hemorrhoidal area and that very few cases have definitely been proved to have developed in a fistula tract. Fistulae occur frequently after the carcinoma is present, but there is very little proof that a carcinoma develops in the fistula tract. Broadly speaking, there are two types of carcinoma which commonly occur, the adeno-carcinoma which occurs above the ano-rectal line and the epithelioma which arises in the anus. Since epitheliomas are external to the ano-rectal line, they are evident upon inspection, but the adeno-carcinoma occurs at the recto-sigmoid junction and in the ampulla. Jones states that only a comparatively small proportion of cases cannot be reached with the examining finger. However, Rankin is of the opinion that a large per cent cannot be felt digitally, and therefore, we should depend more upon the proctoscope for an accurate diagnosis. Broders has changed the surgeon's attitude in regard to character of the growths. The surgeon now is not so much interested as to whether the growth is scirrhous or colloid or some other type, but he wants to know the grade. There are four grades of malignancy which are based upon the character of the cells and the number of mitotic figures present. The less differentiated the cells are the more malignant is the growth. Grades number 1 and 2 are relatively not very malignant, while grades 3 and 4 are highly malignant and very careful consideration should be given before any operative procedure is carried out. This grading should be determined before any operative procedure is attempted. The tissue is taken for a biopsy with a radio knife or loop without danger of stimulating new activity of the growth. At the time of the digital examination, the exact location and size of the growth should be determined. It should also be determined whether it is mobile or fixed and possibly whether there is any regional lymph node involvement. Miles has shown that there are three methods of extension in the lymphatics: First, downward in the wall of the bowel below the growth into the sphincter and in the ischio-rectal fossa; second, laterally into the fascia propria and the levator ani and the capsule of the prostate and the seminal vesicles and the base of the bladder in the male and the vaginal wall and genitalia in the female. Third, upward into the bowel above the growth into the pelvic peritoneum and into the mesocolon. Metastasis does not usually occur very early in rectal growths and the finding of an enlarged gland does not always mean the spread of the malignancy, but it may be entirely inflammatory. So operation should not be refused because of a few small glandular enlargements.

---

*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

A very careful abdominal examination should always be made after finding a carcinoma of the rectum, even though one has made an abdominal examination previously he should again turn the patient upon his back and go over the entire course of the colon and palpate carefully over the liver because you may be able to demonstrate metastases without an exploratory operation.

Symptoms: Unfortunately there is no one early symptom of carcinoma of the rectum. If I were asked to state what might lead one to suspicion an early malignancy, I would say that the most significant symptom would be some alteration in the normal routine bowel habit of that patient or a consciousness on the part of the patient that he has an anus or rectum. Bleeding may be early if a small polyp or adenoma is present, but if bleeding does not occur until ulceration has taken place it is a late symptom.

Pain is not an early symptom unless the growth is near the sphincter or in the anal canal or on the external surface. The presence of the desire to empty the bowel frequently should always demand a careful examination. The patient will not always attach much significance to this as he will think that he has perhaps taken too much cathartic. So ask him if he passes mucus or gas or occasional blood at frequent intervals. When a patient comes in to my office complaining of piles and says that he has eight to ten stools a day and that he has lost weight, I immediately think of carcinoma first and then of ulcerative colitis and then of amebic dysentery. The occurrence of growths at the recto-sigmoid junction produce early obstructive signs and are possibly less advanced when first seen.

Treatment: I am going to consider only the choice of operative methods of treatment. X-ray and radium can be used in the highly malignant grades and in the aged who cannot stand operations and in those who refuse operative procedure. I do not feel that a five year cure can be brought about by either radium or x-ray, and therefore, they are palliative only.

The physician of a decade ago threw up his hands in despair when a colostomy was mentioned. He, himself, was not only horrified but he told the patient of the awfulness of a colostomy. It is a surgeon's lot today to educate the public to the fact that a colostomy is a Godsend to the obstructed patient and not a scourge. I must modify my statement somewhat. If the colostomy has been properly made and the patient has been taught to properly care for it, then there is very little inconvenience to it. The first real advantage of doing a preliminary colostomy is that it permits an abdominal exploration to determine whether the liver or the lymphatic glands are involved or whether there is fixation of the growth to some viscus. When a colostomy is made, great care should be exercised in the care of it when it is first opened. If the stoma is kept clean for the first few days, the patient is shown that it can be easily cared for and he begins his care of it with confidence. We see many patients in all walks of life who have a colostomy and if you inquire of them as to the convenience or inconvenience of such an opening, they are quick, many of them, to show a clean colostomy opening and many seem to be proud of it. I have found the best method of obtaining a well functionating colostomy opening consists of bringing up a large loop of the sigmoid and constructing a bridge of skin beneath the loop so that the stool will pass through the loop while it is out upon the abdomen and while the abdominal wound is healing. This allows the incision to heal by primary union, and when the colostomy is opened at a ten day period, the patient does not have a flood of stool for 24 to 48 hours afterwards because there has been no marked obstruction and the bowel has been emptying fairly normally. When this loop is cut off, you have left two openings about one and one-half to two inches apart so that there is no spilling over of stool from the upper opening to the lower. The patient is then allowed to go home and rest from three to six weeks so that he may completely recover from his debility brought about by his chronic obstruction. I think it is a mistake to subject a patient to a resection too shortly after the relief of an obstruction. You will also find that after three to six weeks that many growths which are fixed at the time of first examination will be fairly free and will be removed much more easily after this period as this period allows the irrigation of that bowel or lower segment and the relief of inflammatory reaction in the tissue about it.

Another type of colostomy is the single barreled type, and this is used when the abdomino-perineal operation is performed. The gut is divided at the time of the preliminary operation and the upper end is brought into the abdominal wound and the lower end is invaginated and closed and dropped into the abdomen or buried beneath the pelvic peritoneum. At a later period the rectum is removed by the posterior route, and if the loop of sigmoid has been buried beneath the peritoneum, it is not necessary to go in the peritoneal cavity for the removal of the growth, but if the bowel has been invaginated only and dropped back into the abdomen, it becomes necessary to enter the abdomen again for the complete removal of the sigmoid loop.

The location of the growth should determine the type of operation which is to be chosen, that is the operation should be fitted to the case rather than the case fitted to the operation.

Three types of operations are commonly employed. They are the posterior excision without colostomy sometimes known as the Kraske with the placing of the anus either in the perineum or at the anus or posteriorly at the base of the sacrum where the cocyx has been excised, and the second, the posterior excision of the rectum with colostomy, and third, the abdomino-perineal operation.

I have compiled a table which roughly gives one an idea as to the immediate mortality from the three different types of operations. The number of three year cures, the number of five year cures per 100, and the number of patients which will be living after the five year period when the immediate mortality is considered. According to this table you will see that the abdomino-perineal and the posterior resection with colostomy are the best types of operations, with a much lower immediate mortality with a posterior resection with colostomy. So with that in mind and with the thought of prolonging life for a larger number of patients by this type of operation. I would recommend the posterior resection with the colostomy.

Considering any mortality tables, the percentage of operabilities should be considered because some surgeons accept greater risks than others, but this again is a matter which statistics do not show up very well because the risks which one man will accept will not be accepted by the next surgeon, and therefore, it is hard to compare the cases from the standpoint of operability.

DISCUSSION

A. C. Johnson, M. D., (Omaha): I think that we are all impressed by recent figures from various clinics regarding the treatment and the end results of carcinoma of the rectum. The figures show that the operability of these patients has been materially increased; that the mortality has been reduced; that the number of five year cures has been very materially increased; and all in all, that carcinoma of the rectum should not be considered a hopeless, inoperable, incurable condition as it has been for so many years.

This change is also noticeable when patients are confronted with the prospects of a permanent colostomy. Some years ago it was difficult to have people accept such a future; but today, because more of this type of work is done and excellent results secured and because they know from their neighbors and relatives who have had similar operations that it is not so greatly to be dreaded, there is born a new hope and possibility of cure.

The important thing from the surgical standpoint, after all, is in the selection of the proper patient from the standpoint of his general condition and the application of the proper procedures for the removal of the lesion so that the mortality may be kept low.

Dr. Rankin has reported twenty-four straight cases of carcinoma of the high rectum and the rectosigmoid area in which he performed combined posterior resection with abdominal incision, and with preliminary colostomy made six weeks before the posterior and combined operation was performed, with but one death. This can be made a radical operation with wide resection of the gland bearing area, and the treatment will leave the patient in fair condition if the growth has not been too extensive and if metastases have not taken place.

I think that colostomy should be made routine. There should be no attempt to make an anastomosis of the bowel, because the operation is more limited and the mortality high. A preliminary colostomy of the single barrel type sems to work better, and the patients are comfortable over a longer period of time. The combined perineal-abdominal operation is most desirable, taking out the entire segment through the rectum in the second stage perineal resection. In growths low down, the usual combined operation—perineal excision plus a colostomy—is adequate.

The main thing is that carcinoma of the rectum is an operable and curable disease, if taken early.

RUSSELL BEST, M. D., (Omaha): In speaking about the age in carcinoma of the rectum, we should not overlook the fact that it occurs rather frequently fairly early in life. In the last 8 months I have seen 7 cases under 39 years of age.

As regards diagnosis, all leading authorities agree that the proctoscope is the most important diagnostic factor in lesions of the lower sigmoid and rectum. The x-rays will miss lesions of the rectum unless they are quite large. No barium enema examination is complete without a proctoscopic examination. The finger alone will diagnose about 50% of the lesions, the remainder being too high to be palpable.

As regards symptoms, when the patient complains of numerous bloody stools, is very anemic and emaciated, he has the signs of impending death. It is the early symptoms we should be interested in—mild changes of bowel function and vague abdominal distress.

At the present time it is the consensus of opinion that the abdominal-perineal operation is the best operation for removal of carcinoma of the lower sigmoid and rectum. The anatomical and pathological principles of Miles should be followed. I occasionally do a colostomy followed by posterior resection with or without anastomosis but I feel that more cures are apt to follow the abdominal-perineal type of operation which I do in most instances. This is a larger operation but by proper handling of the patients the mortality rate may be kept practically as low as in posterior resection.

HOW TO KILL A MEDICAL SOCIETY

By Charles J. Whalen, M. D.

1. Don't come to the meetings. If you do come, come late.

2. If the weather doesn't suit you, don't think of coming.

3. If you do attend a meeting, find fault with the work of the officers and other members.

4. Never accept office, as it is easier to criticize than to do things. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings.

5. If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say.

6. After the meeting, tell everyone how things ought to be done.

7. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is being run by a clique.

THE USE OF LIVE MAGGOTS IN THE TREATMENT OF OSTEOMYELITIS*

S. J. CARNAZZO, M. D.,
Omaha, Nebraska.

HISTORY

The invasion of infected wounds by maggots has been known for many years. Ambrose Pare was the first, it is believed, to note the good effects of maggots in suppurative wounds as early as the 16th century. Hieronymus Fabricus made similar observations in 1634. Zachmann, in 1704, was the first to try to explain the origin of maggots in wounds. Larrey, a surgeon of the army of Napoleon, spoke of maggot infested wounds. During the Civil war, Zacharias utilized maggots successfully in the treatment of suppurations, but his experiences seem to have been forgotten until they were duplicated by the late William S. Baer.

In 1927 during the World war, two wounded soldiers were brought under the care of Dr. William Baer. These men had both sustained compound fractures of the femur and large wounds of the abdomen and scrotum. They had been found on the battlefield after having lain there for seven days without food or water, exposed to the weather and to all the different insects found in that locality. Their wounds were swarming with maggots, apparently those of the blow fly, but what puzzled Dr. Baer was the apparent good condition of the patients. They had no fever and showed no evidence of septicemia. Of course, no time was lost in ridding their wounds of the maggots, and here Dr. Baer and his assistants witnessed another surprising thing. The wounds were filled with healthy granulation tissue. At the time of these happenings, the mortality of compound fractures of the femur was 75% to 80%, but these two patients, contrary to all principles of surgery, went on to healing. Cultures taken at this time from the wounds revealed very few staphlococci and streptococci.

For ten years Dr. Baer kept these two cases in mind, and finally in 1928 he determined to put the observation made on the battlefield into practical use in civil surgery. He encountered many obstacles which arose in connection with obtaining a continuous supply of maggots. The sterilization of the maggots was no simple problem. Nine of his patients contracted tetanus and two died. Because of all these difficulties, it was not until 1930 that the maggot treatment was rendered available to the medical profession.

A detailed discussion of the preparation of the maggots would be out of place here. Only a brief description of the method now used will be given. The green bottle blow fly is the mother fly. The most suitable food for these flies has been found to be yeast and honey. They are placed in gauze cages and strips of raw beef are provided for them to deposit their eggs. It is necessary to maintain proper conditions of humidity and temperature. The eggs are gathered daily and sterilized in 1:1000 bichloride of mercury containing 25% of 95% alcohol. A few eggs from each batch are implanted in glucose broth and incubated for anaerobic growth. If these cultures are cloudy the maggots from that batch are discarded. The eggs hatch in from 8 to 24 hours. When the maggots are 48 hours old they are ready for use.

TREATMENT

In treating osteomyelitis, a preliminary operation is necessary. The skin is shaved and cleansed with soap and water. No antiseptics are used. The operative procedure must be complete and thorough. If a sequestrum is present, this should be removed. If no sequestrum is found, the bone should be saucerized and all necrotic bone removed. Hemorrhage is controlled and the wound is packed with sterile vaseline gauze. In about 48 hours the pack is gently removed.

The wound is now ready for the implantation of the maggots. The latter are shipped in small bottles containing media and consisting approximately of one thousand maggots. Then some sterile normal saline is poured into the bottle in order to suspend the maggots. They are then strained through sterile gauze and gently scraped into the wound with a sterile tongue depressor. The skin edges are covered with strips of adhesive on which is built a wall of sponge rubber. The whole cavity is then closed by means of a fine mesh brass screen which is tightly fixed over the sponge rubber. A prophylactic dose of tetanus-antitoxin is given with the first implantation. The wound is then exposed to natural or artificial light and not touched for five days. It seems that the maggots avoid light and go deeper into the wound. When implanted the maggots are about 48 hours old. They thrive in the wound for five days, growing to many times their original size and then they either die or some escape. After the fifth day the cage is removed and the remaining maggots are washed out with sterile normal saline or sterile water. Those that are imbedded deep in the wound are removed with sterile thumb forceps, and a new implantation can be made immediately, but I usually wait 24 hours as this gives the patient same mental rest. From five to ten infestations are necessary for a cure.

---

*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

With the first few implantations there develops a profuse brownish discharge which often has to be drained to keep from drowning the maggots, but this discharge gradually lessens as healing proceeds. After the second implantation one finds the wound filling with pink healthy granulation tissue which rapidly increases and is finally covered with epithelium, leaving a minimum of scar tissue. The reaction of the wound changes from acid to alkaline, and the bacterial count gradually diminishes.

On the third or fourth day the patient may develop a temperature of 102° to 104°. This should cause no great concern, nor the removal of the maggots, for it will return to normal in about 24 hours. The patient usually complains of crawling sensations due to the activity of the maggots, and at times the discomfort is so great that sedatives or opiates must be administered.

THEORIES FOR THERAPEUTIC EFFECTS

The manner in which the maggots act has been a subject for debate since the introduction of this therapeutic measure. Some are of the opinion that the action is purely mechanical, that is, that the maggots feed on the devitalized tissue until it has been removed. Indeed it would seem that way to watch the tiny creatures in action, working ceaselessly and untiringly. They do not seem to care for healthy tissue, for as soon as blood flows from a small area, they move to other parts. On the other hand, the maggots produce or cause to be produced some agent which is able to overcome infection or establish the proper hydrogen-ion concentration in the wound. That this is true has been demonstrated by the use of a filtered extract from the bodies of crushed larvae.

In my own cases sometimes a batch of maggots would die the same day they were introduced into the wound. When this has happened, I have left the maggots in the wound until the next shipment arrived. I have noticed that in spite of their death, the wound continued to improve in the same manner that it would with live maggots. It may be that leaving these dead maggots in the wound is equivalent to using the filtered extract which Livingston calls the "active principle." Livingston is of the opinion that the substance produced is a bacteriophage, while others believe that it partakes of the nature of an enzyme. Whatever the substance, or whatever its composition, its effectiveness is certainly striking and cannot be denied.

I cite the following cases as examples of the efficiency of the use of maggots in osteomyelitis.

Case I. D. L., a seven year old, white, male, was admitted into the hospital because of two discharging sinuses on the outer side of the left heel and one on the inner portion. Seventeen months previous the child had been taken sick with high fever and severe pain in the left ankle region. He was operated, but his wound did not heal completely and had recurrence in several months. Two subsequent operations failed to rid the patient of the discharging sinuses. When seen by me, there were two sinuses seemingly communicating with the left os calcis on its outer aspect and one on its inner aspect. An x-ray taken at this time revealed marked irregularity of the left os calcis, but no sequestrum was demonstrable. This patient was operated opening the sinuses to their termination and removing a small portion of the os calcis. The bone was thoroughly saucerized and packed with sterile vaseline gauze. Maggots were implanted 48 hours later and every five days for nine implantations. The child went on to healing and is well today, with no recurrence.

Case II. N. S., a ten year old, white, female, was admitted into the hospital complaining of pain over the lower portion of the right tibia. She was suddenly taken ill on January 1st of this year with a chill and high fever. Following the chill and fever she developed severe pain over the right lower portion of the tibia. She had had a boil on her right arm for a few days previous, which the mother squeezed for her. A diagnosis was made of acute osteomyelitis and the patient was operated. Operation revealed acute osteomyelitis and a smear of the pus taken revealed staphylococcus aureus. One week after the first operation, the second operation was performed removing all devitalized bone and thoroughly saucerizing the part. 48 hours later maggots were implanted and every five days for five implantations. At this time the child is attending school and no recurrence.

Case III. S. A. a nineteen year old, white, female, was admitted into the hospital complaining of pain over left hip of four months duration. She had typhoid fever fifteen months ago. X-ray of left femur revealed some areas of necrosis below lesser trocanter, and a diagnosis of typhoid osteomyelitis was made. Operation was performed and all devitalized bone removed. The wound was packed with vaseline gauze and maggots were introduced 48 hours later. After five implantations the wound was closed with pink granulation tissue and until up to date there has been no recurrence.

Case IV. G. L., a nine year old, white, female, was admitted into the hospital complaining of pain and swelling over left pubic region. About fifteen months ago was operated for an acute osteomyelitis of left pubic bone. X-ray at the time of my examination revealed three circular areas of lessened density of the superior ramus of left pubic bone near the symphysis and which looked like three bone abscesses or a large abscess with three cavities. Operation revealed three different distinct cavities. The superoir ramus was saucerized by removing all the necrotic bone and cavity packed with vaseline gauze. Maggots were intoduced 48 hours later. After five implantations were used the wound was completely filled with pink granulation tissue. No recurrence up to date.

OTHER APPLICATIONS OF MAGGOT THERAPY

The use of maggots is not limited to osteomyelitis. Good results have been reported in the treatment of tuberculous bones and joints, tuberculous sinuses, compound fractures, and chronic ulcers. The active principle has been used with good results by Livingston in the treatment of chronic discharging ears and in chronic sinus disease.

CONCLUSIONS

It goes without saying that most surgeons will hesitate before adopting a method of treatment which seems to be opposed to all the fundamental principles of surgery. I must admit that I was somewhat skeptical about using maggots in my cases, but the results have been gratifying. I quote from a recent article in the Illinois Medical Journal: "There are over 10,000 cases of unhealed osteomyelitis in the United States. All of these are in a state of invalidism. They have all had some kind of surgical treatment. This treatment has failed to cure. An average of 60% of cases of osteomyelitis are dismissed as improved; this means with discharging and unhealed wounds." Child and Roberts report nine cases of chronic osteomyelitis with eight cures. Wilson, Doan and Miller report a series of twenty-six cases, twenty-two of which were known to be healed at the time of the report.

The diversity of opinion as to the proper surgical handling of acute osteomyelitis bespeaks its difficulty of cure. The obstacles to be overcome are generally well understood. but no adequate means has heretofore presented itself. I believe that the maggot treatment is a distinct advance in the method of handling these cases. As yet it cannot be stated that it is the only proper way to treat osteomyelitis, but the results reported in the last two years are very promising. It can at least be said of the Baer Maggot Treatment that it is as good as any that has been heretofore devised.

REFERENCES

Asbury, E., and Flook, S.: Maggot Treatment of Osteomyelitis, J. Med. 13:126, 1932.

Baer, W. S.: Treatment of Chronic Osteomyelitis With Maggot (Larvae of the Blow Fly), J. Bone and Joint Surg., 13:438, 1931.

Child, F. S., and Roberts, E. F.: Treatment of Chronic Osteomyelitis With Live Maggots, New York J. Med., 31:937, 1931.

Livingston, S. K.: Maggot Treatment of Osteomyelitis, J. A. M. A., 98:1585, 1932.

Livingston, S. K.: Maggots in Treatment of Chronic Osteomyelitis, Infected Wounds, and Compound Fractures, Surg., Gynec. and Obst., 54:702, 1932.

Livingston, S. K., and Prince, L. H.: Treatment of Chronic Osteomyelitis With Special Reference to Use of Maggot Active Principle. J. A. M. A., 98:1143, 1932.

Myers, J., and Czaja, L. M.: Maggot Treatment of Osteomyelitis, Illinois M. J. 60:124, 1931.

Buchman, J., and Blair, J. E.: Maggots and Their Use in the Treatment of Chronic Osteomyelitis, Surg., Gynec. and Obst. 55:177, 1932.

DISCUSSION

T. Y. DORWART, M. D., (Lexington): Mr. Chairman: My experience with maggots has been confined entirely to compound fractures. I had the pleasure of hearing a recent paper at Detroit. What impressed me most was the Doctor's experience with gas bacillus, which we fear in our general practice. They die in thirty-six hours. He placed maggots in the wound, and at the end of forty-eight hours all recovered. That is why I first used them on a case with soft tissue destruction.

Although I have used Dakin's fluid and everything one could use to get the wounds clean, in a week or so we had a profuse discharge, and a dirty wound for weeks. The action of maggots is striking after the second day, especially on the soft tissue. I have had no experience with a bone. But as to using maggots on soft tissues, I rather think in some cases I would have been obliged to amputate if I had not used the maggots, because the infection was so great, particularly in two cases.

I found a little pain at the exposed nerve endings, but I was able to control it with codein.

There is something which interacts between maggots and living tissue which promotes healthy growth. I recall, as a boy on the farm, we had many wire-cut horses. In summer time they invariably became infected with maggots. I have never seen a chronic osteomyelitis in a wire-cut horse, probably because of the maggots.

H. WINNETT ORR, M. D., (Lincoln): I agree with Dr. Carnazzo that the maggot method of treatment for osteomyelitis has certain advantages. These advantages are that those who use the maggot method have discontinued the use of drainage tubes, chemical antiseptics, and daily dressings. These are points that I have been contending for now for about twelve years. With regard to the maggots themselves, however, or maggot extract or anything of that sort, it is my opinion that they have nothing to do with the healing of these wounds one way or the other. Moreover in using the maggot method dressings are still done more frequently than I consider necessary.

On the other hand the maggot method has certain serious objections. It is a difficult method to employ both from the patient's and the surgeon's standpoint. If properly done it is quite expensive, and if it is true, as I believe, that the maggot in itself presents no particular advantages I cannot see any reason for using it.

Dr. Carnazzo has presented only four cases. During the past year I have treated about one hundred and fifty cases of osteomyelitis, compound fracture and similar infections in three Lincoln hospitals—the Veterans hospital, the Lincoln General hospital and the Nebraska Orthopedic hospital. Nearly all of these patients are well. No maggots or maggot extract were used in any of our cases. We did employ maggots one time in Lincoln but it was our experience, as it is with a good many, that one trial with maggots was quite sufficient and we have never cared to try them again.

The manner in which we persuade our patients to heal up is by doing an adequate drainage operation, as has been suggested by Dr. Carnazzo, then by putting in a vaseline pack and putting on a plaster of Paris cast with all of the parts in correct position and letting them alone. In this way practically all of our patients get well and get well in a comparatively short time.

We do receive a certain number of patients whose infection is so severe or in whom the infection has spread so far that early recovery without serious complications cannot be expected. In such cases we have to be guided by the surgical indications. In a majority of patients with a single lesion, however, and in those who are not too sick, adequate drainage and post-operative care along the lines I have suggested is all that is necessary.

I think we must remind you that the expectations of Dr. Baer with regard to the maggot method have never been realized. When he and Dr. Livingston made their first communication in the fall of 1928 and in the spring and summer of 1929-30, they thought that all of their patients were getting well. In fact Dr. Livingston said before a Congressional Committee that of three hundred patients treated at that time, in 1929, all were well. When Baer's paper was publishd in 1930, however, by Dr. Bennett, after Dr. Baer's death, there were only eighty-nine cases to report and of these less than 50% were healed. This showing is no better than we have been getting in chronic osteomyelitis with ordinary methods for many years. What we must have is a method that in a long series of cases makes a better showing than the results to which we have been accustomed. In the method that I have been advocating many observers have now reported and we have statistics that indicate a healing in from seventy-five to ninety per cent of all kinds of cases treated. This showing is so much better than any other method that we know that it can be safely recommended for general adoption.

Let me remind you that the Orr method is not simply doing infrequent dressings with a vaseline pack, it consists of the other essentials of surgical care—namely, an adequate primary drainage operation, protection of the patient's wound against secondary infection, immobilization in correct position to avoid contracture deformities and muscle spasm, and good general care so that the patient may make the best recovery possible in view of all the circumstances. If the patient is treated in this way neither the maggot treatment nor any other frequent dressing method will have any place in the surgical care of these cases.

I am showing you a lantern slide of an interesting patient who has been under my care for several years. This girl came to me from Dr. MacKechnie at Indianola, Nebraska, about eight years ago with a severe osteomyelitis at the upper end of the tibia which had perforated into her knee joint. It was thought at that time that her leg would have to be amputated. With the method I have described, however, she recovered and was entirely well but with a stiff knee. About two years ago at her urgent request, we did an arthroplasty so as to give her a movable knee. This operation terminated most satisfactorily and she has been very well and has been attending the University for two years since that operation was done. Just two weeks ago, while dancing, she had a fall and fractured the femur about two inches above the knee. Unfortunately the new artificial knee joint was also injured so that there was a partial dislocation and a very great amount of damage to all the structures in the vicinity of her old trouble. We not only had to put intraction pins through the tibia below the knee and into the fracture region of the femur but we had to do an open operation through a considerable amount of scar in order to get the perfect reduction of the femur fragments that we desired. This was done, however, and she had now gone to her home in a double plaster of Paris spica cast with all the parts in correct position and without any inflammatory complications of any kind. I think this speaks very well for the Orr method of treatment; sound healing in a very badly infected area has been obtained and she has remained well as to her infection through many vicissitudes since that time.

DR. CARNAZZO, (closing): I have nothing more to say except it is certainly striking after one has changed to the maggot treatment. Dr. Orr says all you have to do is to keep the wound open, that is not true. I have seen cases and worked with men where the Orr method was used for three or four months, and we had to change from the Orr treatment to the maggot treatment. I saw one case where the Orr treatment was used for seventeen months with no success; but, after we changed to the maggot treatment the boy's leg was saved.

PILONIDAL SINUS

J. HAROLD LYNCH, M. D.,
Fairbury, Nebraska.

Pilonidal sinus warrants our consideration because of the frequent mistakes make in its diagnosis and the usually inadequate methods of treating it. In reviewing the subject one is surprised at the few references to be found in medical literature or in textbooks on surgery. This uncommon, but not rare, abnormality is a congenital skin-lined sinus or cyst which is found external to the sacrum and coccyx. It is also called pilonidal cyst, sacrococcygeal dermoid, sacrococcygeal cyst, coccygeal fistula, sacral sinus, and postanal dermoid.

Probably the first report of this condition was by Warren(22), in 1867. He presented two cases, and remarked that although he had observed the lesion eight or ten times, he had nowhere seen it described. He noted the frequency with which it was confused with fistula in ano, and stated that the sac should be layed open and then dissected out. Regarding the origin of the affection, he stated, "It would seem possible that it may begin in the stout hair or hairs arising from a single follicle becoming in some way diverted from their normal direction, and inverted upon themselves within the follicle itself; the continued growth of the hair would then result in the formation of a tangled knot or ball of hair, which might readily give rise, after a time, to irritation."

In 1880, Hodges(10), referring to Warren's article, said, "This reference constitutes, so far as I can learn, the only allusion to the subject in medical literature." Hodges offered the name "pilo-nidal sinus" —from pilus, a hair, and nidus, a nest. He believed that a dimple was formed by an imperfect union of the skin in the midline, and that broken off body hairs accumulated in this depression, later penetrating the skin and causing an inflammation which degenerated the original dimple into a fistulous tract. He made the error of stating that the sinus had no lining except granulation tissue. He stated that the following elements are necessary for the development of this lesion: "(1). The presence of a congenital coccygeal dimple. (2). Abundant pilous development, hence, adult age, and almost of necessity the male sex. (3). Insufficient attention to cleanliness."

Lawson Tait regarded the dimples as defects due to the evolutionary disappearance of a cadual appendage.

In 1885, Wendelstadt(25), advanced the following theory: "The inferior end of the spinal cord is the last portion to lose its connection with the skin. As the sacrum closes together and pinches off this connection, the skin becomes attached by fibrous tissue at this point to the posterior surface of the sacrum. As adult life approaches, fat and soft parts grow and lift the skin farther away from the bone. The attached spot is thus drawn down into a dimple or sinus."

Herman and Toureux(9), in 1887, showed that after the separation of the spinal cord from the superficial tissues a process of epithelial tubules persists for a time at the site of the previous connection of the neural axis with the skin, forming a vestigial remnant which normally disappears. When atrophy fails to take place a pilonidal sinus may develop.

Graham(8), in 1897, distinguished between the small, blind follicles or pits of pilonidal sinus and the larger, shallow depression known as coccygeal dimple. He insisted on the recognition of pilonidal sinus as an affection distinct from dermoid proper. He believed that the "hair found in external dermoids is, without exception, short, fine, curly and devoid of pigment; while that found in the hair sinus will always correspond in size and color with that found on the contiguous regions of the patient."

Bookman(2), in 1924, maintained that "dermal or dermoid cells" are displaced in the embryo and later the products of the skin metabolism accumulate forming a cyst. He thought that pilonidal sinus was the result of suppuration or breaking down of a pilonidal cyst.

Dulligan(7), in 1929, stated that pilonidal cyst is simply another term for a dermoid cyst occuring in the sacrococcygeal region. "It is a congenital invagination, partial or complete, of the ectoderm with all its appendages. If the included ectoderm is completely surrounded, we refer to it as a cyst; if partly surrounded, as a sinus or fossa."

Stone(21), in 1931, noted the resemblance of the preen-gland, found in a great many species of birds, and pilonidal sinus. Paris(18) has shown that not only the birds but all the amniotes present species that have similar or analogous structures. Stone stated, "It may be assumed that in certain individuals of the human species this latent potentiality for some reason develops into an actuality and results in the structure known clinically as a pilonidal sinus."

The sinus communicates with the skin by one or, occasionally, more fistulous tracts. The opening lies in the midline of the sacrococcygeal region, is three or four millimeters in diameter, round or oval, lined with skin, and free from granulations. Occasionally a small tuft of hair is seen projecting from the orifice. A probe passed into the sinus tract is directed upward in a large majority of cases. There may be no external opening, in which case midline dimples are generally present. There may be several external openings but usually one will be found to be lined with skin and the others with granulation tissue and have ragged ulcerated orifices. Openings not in the midline are the result of an operation or suppuration. When acute infection is added to the simple pilonidal sinus, the clinical picture changes; pain, swelling, and local cellulitis ensue. According to Anderson(1) it may break into the rectum following inflammation and plugging of the tract. Moise(15), in 1926, reported a case of staphylococcus meningitis secondary to a pilonidal sinus which connected with the spinal canal through a spina bifida occulta. A similar case was reported by Ripley and Thompson(19), in 1928. These two cases would suggest that pilonidal sinuses are developmental anomalies resulting from incomplete closure of the distal end of the medullary canal.

According to Cattell and Stoller(4), in the normal individual there is a fairly constant cleft directly over the sacrococcygeal joint, which varies in depth from a superficial dimple to a cleft one-fourth inch deep. The writer has found a sacrococcygeal dimple present in relatively few individuals.

The sinus may end in a small bulb-like enlargement or a large sacculated pouch. The tract is lined by skin, unless its walls have been destroyed by suppuration. Stone(20) made sections of a typical sinus which had never been inflamed. His description of the histology, follows: "The lumen of the sinus contained hairs. The inner portion of the wall was of many layers of stratified cuboidal epithelium with only slight cornification adjacent to the lumen, but with imperfect and rudimentary papillae in certain areas. Hair follicles were seen and also sweat glands. Outside of the epithelial layer was a dense corium-like sheath, and beyond this loose fat and areolar tissue. Some of the sweat glands lie in the fat at quite a distance from the lumen of the sinus. In short the sinus is a slightly modified invagination of true skin. None of its elements were fully developed—even the characteristic hair is thin, fine, and scanty in pigment."

The condition, although always congenital, usually remains dormant until early adult life, when the added etiological factors of trauma and infection occur and draw attention to it. According to Anderson(1) 95 per cent of the cases are infected when first seen. The affection is much more common in men than in women (about 5 to 1). Statements that it occurs especially in individuals with an unusual pilous develtopent seem unwarranted. All cases of pilonidal sinus that have been reported occurred in the white race. Stone$^{(20)}$ reports one group with a familial incidence of these sinuses.

To one familiar with pilonidal sinus, there rarely is difficulty in diagnosis. It has been most commonly confused with fistula in ano, from which it may usually be differentiated by the characteristic appearance of the opening, the type of lining, and the direction of the tract. Roentgen-ray examination will differentiate these sinuses from spina bifida and osteomyelitis or tuberculosis of the sacrum or coccyx. A pilonidal cyst may suppurate and be mistaken for ordinary pyogenic processes or an ischiorectal abscess. According to Masson$^{(14)}$ it also must be differentiated from teratoma, fetal implantations, traumatic dermoids, and implantation cysts. Brams$^{(3)}$ injected lipiodol to determine the nature, extend, and possible connection with the neural canal; and Anderson$^{(1)}$ recommends that an x-ray of the region should be carried out routinely. It does not seem necessary to thus add to the cost of medical care in the simple, characteristic cases. However, in selected cases, the writer believes that valuable information may be obtained from an x-ray examination after injecting the sinus tract with lipiodol.

A large percentage of the cases that consult a surgeon have previously been operated on in some manner, with unsatisfactory results. Weeder$^{(23)}$ maintains that recurrence in the best hands is between 25 and 35 per cent. Various substances have been injected, endeavoring to obliterate the sinus by non-operative measures. Cutler and Zollinger$^{(6)}$ report good results from applying a modified Carnoy's solution to the sinus tract after incising it under local anesthesia. Maillard$^{(13)}$ reports a case successfully healed after three months treatment with the galvanic current. Incision and drainage and currettage are inadequate. It is generally agreed that radical excision is the method of choice and that this is best accomplished by wide bloc dissection through the surrounding normal tissue. It is necessary that the dissection include all the lateral extensions of the sinus and be carried down to the posterior sacrococcygeal ligaments and laterally to the fascia over the gluteus maximus. The operation may be done under local infiltration anesthesia. Ottenheimer$^{(17)}$ believes that it is necessary to remove all infected sacrococcygeal fascia to prevent recurrence. Weinstein$^{(24)}$, in several cases, found the sinus tissue so adherent to the periosteum of the sacrococcygeal region that it was necessary to excise the periosteum to assure complete removal. Weeder$^{(23)}$ contends that in those cases which recur after careful bloc dissection of the soft parts, those in which an x-ray examination of the sinus injected with a substance opaque to x-rays shows the tract to invade the sacrococcygeal joint, and in those which show a stain at the sacrococcygeal joint after injecting the tract with methylene blue, that a remnant of the sinus tract is contained within the sacrococcygeal joint as an unobliterated portion of the medullary canal. He states that in these cases a cure will be obtained by excision of the coccyx and currettement of the articular surface of the sacrum and the sacral hiatus. The injection of methylene blue may be an aid in determining lateral branches of the sinus in case they are cut through, but there is a possibility that all of the ramifications will not be penetrated by the fluid. When there is large abscess formation it should be drained and radical excision postponed until the inflammation has subsided. If there is only a small well-localized area of acute inflammation the entire infected area may be excised.

After the cyst or fistulous tract has been excised, we believe it is best, in most cases, to pack the wound with gauze and let it heal by granulation. Although it takes 6 to 8 weeks for the wound to heal by this method, it furnishes good protection against recurrence. Various methods of primary suture or partial suture and drainage of the wound have been described—these methods, if successful, are quicker. The success of these methods is largely dependent upon asepsis and accurate hemostasis. Colp$^{(5)}$ was able to get primary union by tacking each flap to midline of posterior sacrococcygeal ligament with interrupted silk mattress sutures—undermining tissues over the gluteal muscles if necessary for easy approximation. Morter$^{(16)}$ closes the wound with silkworm gut splint sutures after packing it lightly with gauze which is allowed to protrude at each end of the incision. The gauze is removed in 24 hours and for the following three days the wound is irrigated with Carrel-Dakin solution twice daily. He claims 85 per cent of the wounds healed without infection by his method. To avoid the scar over the sacrum and furnish a soft pad of tissue to withstand the pressure of sitting, Lahey$^{(11)}$ moves over a flap of skin and fat. The lateral defect thus left is packed with gauze and let granulate in, or, rarely, it may be closed. Wharton(26) uses a flap method and feels that recurrences are far less frequent than with other described methods. LaRochelle(12) closes the wound and inserts a rubber tube through two stab wounds placed laterally about opposite middle of the line of incision and irrigates the cavity, hourly, day and night, with a 1:5000 metaphen solution. The tube is removed in 5 to 7 days. He states that patients can be assured of a cure, in all but a very few cases. Weinstein(24) closes the wound and drains it at lower angle with a cigarette drain. He claims that, in 13 cases operated on by this method, there have been no recurrences.

TYPICAL CASE REPORTS

The following cases illustrate the two most common mistakes made in the diagnosis of the condition.

Case 1.—L. M., male, thirty-three years old, was first seen September 4, 1928, complaining of "a boil at lower end of spine." For the preceding two weeks he had suffered pain and swelling in this region, which was becoming progressively worse. Three years previously he had his first "boil" in this region, and it had been lanced several times. He stated, strange as it may seem, that the wound healed quite readily after each incision. There was in the midline of the sacrococcygeal region a swollen, tender, slightly red, fluctuating mass about 3 cm. in diameter. At the lower border of the mass a sacrococcygeal dimple was seen.

On September 4, 1928, under local anesthesia, the cyst was excised en bloc through a longitudinal elliptical incision extending well out from the inflamed area. The wound was packed with iodoform gauze. The cyst wall was about 5 mm. in thickness, contained colon bacillus pus, and many fine hairs.

The wound healed by granulation in about two months and there has been no recurrence.

Case II.—G. H., male, twenty-four years old, was referred July 6, 1931, with diagnosis of fistula in ano. In December 1930, he had an abscess in the sacral region which his doctor had lanced. It had never healed, and since that time he has had intermittent pain and purulent discharge for 3 or 4 days at a time. Near the top of gluteal fold, slightly to left of the midline, there was a small ragged sinus opening containing granulation tissue. A few drops of muco-purulent material could be expressed. Tip of probe, inserted downward for about 7 cm., was palpated about one-half inch from rectal wall. In the midline, about 4 cm. below this opening, there was another small opening, characteristic of pilonidal sinus.

On July 7, 1931, he was operated on under spinal anesthesia. Methylene blue solution was injected through the upper orifice. The sinus was incised on a grooved-director from the adventitious sinus opening to the tip of the coccyx. The epithelial tissue of a branching sinus was readily excised. The wound was packed with gauze. (A hemorrhoidectomy was also performed.)

The wound healed readily and the condition has not returned.

CONCLUSIONS

1. Pilonidal sinus is more common than one would suppose from a review of the literature.
2. The diagnosis should not be confused, if the condition is kept in mind.
3. To prevent recurrence complete removal of the pilonidal tract is necessary.
4. The cure of pilonidal sinus often entails an economic loss comparable to many major surgical procedures.

(Note: Bibliography in Reprints.)

THE THYROID GLAND

MAX EMMERT, M. D.,
Omaha, Nebr.

An appreciation of thyroid disease necessitates a comprehension of the anatomy, physiology and pathology of the gland and its relationship to the entire endocrine system of glands.

The thyroid consists of two lobes joined across the trachea by a narrow transverse portion called the isthmus. It extends from the junction of the middle with the lower third of the thyroid cartilage downwards to the level of the fifth or sixth tracheal ring. It normally weighs one ounce in the male and is slightly heavier in the female. The isthmus at times is absent and frequently a third lobe called the pyramid is found arising from the isthmus or left lobe which may extend up as far as the hyoid bone. It may be entirely separated from the gland and be divided into several parts. The gland is invested in a connective tissue capsule which is thin anteriorally and increases in thickness as it passes around towards the posterior surface.

The thyroid is richly supplied with blood vessels consisting of the superior thyroidal arteries entering each superior pole and the inferior thyroidal arteries entering the inferior pole of each lobe. In some cases another small artery called the thyroidea ima, arising from innominate or arch of the aorta ascends the anterior surface of the trachea and supplies the lower portion of the gland. There is a very free anastomoses of the arteries. The veins are numerous and large and follow the main arteries except for the middle thyroidals which leave the gland from each side and empty into the innominate veins. These middle thyroidal veins are very important as landmarks. The lymphatics and nerves of the gland proper are of minor surgical importance.

From a surgical view point the important anatomical factors of the gland are as follows:

A—The extensive vascularity which necessitates careful hemostasis especially in cases of thyro toxicosis. Also the very slight danger of eliminating the entire vascular supply by surgical procedure.

B—The relationship of the parathyroids outside the connective tissue capsule.

C—The posterior recurrent laryngeal nerves also posterior and median to the capsule.

D—The median thyroid veins which serve as guides when freeing the gland from its capsule.

PHYSIOLOGY AND FUNCTION

Although a vast amount of experimental and clinical work has been done upon the thyroid gland, there still remains much to be learned regarding its function. We know that it is one (together with the adrenal and liver) of the chief motivating factors of brain activity. It is the one gland in the body chiefly concerned with iodin metabolism. It splits up the iodin containing molecule of any compound of iodin which enters the body, such as ferrous iodid, sodium iodid, potassium iodid, and converts the iodin into a thyroid product called thyroxin.

Crile and his có-workers have advanced the hypothesis that the human organism is an electrochemical mechanism "in which increased functional activity is synonymous with increased electrical conductivity." By experimentation they showed that iodism increased the temperature of the brain. Meyer of the Marine Laboratory in Florida showed that iodin increased the electric conductivity of water; so that we may assume that iodin increases electric conductivity of the entire organism through the nervous system. This theory is substantiated by clinical observations of increased mental and metabolic activities in cases of thyrotoxicasis. Crile concludes the "function of the thyroid gland to be, that of a controller of electric conductivity of the brain, hence a controller of its sensitivity and of its activity, hence, a controller of basal metabolism."

To the surgeon, a conception of the function of the gland is of importance in determining the amount of tissue to leave when doing a thyroidectomy. I do not believe that any dogmatic statement can be made regarding the amount of tissue which should be removed at operation. Oftentimes a clear line of demarcation is seen between the healthy and diseased gland tissue which renders the decision easy. The type of goiter, the amount of toxicity and the size of the gland are of importance. It is well to remember that the thyroid gland has wonderful powers of regeneration which may be of advantage or disadvantage to the surgeon, depending upon whether he has removed too much of the gland or has not taken necessary precautions to prevent regeneration in his post-operative treatment of certain toxic cases.

PATHOLOGY

The many classifications for diseases of the thyroid is indicative of the impossibility of arriving at a definite satisfactory classification. The recent classification, as promulgated by the Committee on Classification appointed by the American Medical Association for the Study of Goiter, offers for practical purposes a working basis upon which the subject may be considered. It is as follows:

Type 1. Non toxic diffuse goiter.
Type 2. Toxic diffuse goiter.
Type 3. Non-toxic nodular goiter.
Type 4. Toxic nodular goiter.

This classification is faulty in that it presupposes that a diseased gland is palpable whereas we know that in a certain small per cent of toxic goiters, the gland is not demonstrably enlarged upon physical examination. An appreciation of the pathology of the gland and the necessity for recognizing the diseased tissue at operation prevents a too radical excision of tissue. Frequently it is only necessary to shell out an active adenoma without removing any of the normal gland tissue. This is true also of certain toxic cysts which are found at times during the operation. In dealing with a typical exopthalmic or highly toxic adenoma the restriction of circulation to the remaining gland is of as great importance as the removal of the gland tissue.

The symptomatology and classical signs of the disease are so well known that it is not necessary to include them in this resumé. However, it is well to remember that the precipitation of a thyroidal crisis is frequently caused by extraneous influences among which may be mentioned emotional excitation, foreign proteins, pain, auto-intoxication, wound secretion, focal infection, infectious disease, asphyxia, hemorrhage, inhalation anesthesia and injection of adrenalin. Infected tonsils are especially related to thyroid disease and when present should be removed either before or shortly after the thyroidectomy, perferably after thyroidectomy as there is grave danger of precipitating a thyroidal crisis by tonsilectomy.

One of the most interesting pieces of experimental work of recent years is that of Crotte who has isolated a fungus from endemic human goiters and also from water which produced a goiter in 66% of the dogs into whom it was injected. In 1927 Chesny found that by feeding cabbage to rabbits he could induce a diffuse goiter in 15-20 days. Crotte isolated his fungus from cabbage which possessed the same cultural and etiological qualities as that from the human goiter. This fungus was not influenced by adding Lugol's solution to the water supply. This work may explain the fact that clinically we see cases which are not influenced by iodine treatment.

The relationship of the thyroid to the other endocrines is one of the most interesting and important factors in the goiter problem. We are especially indebted to Crile for showing the relationship between the thyroid and the adrenal glands. As stated before, the thyroid and its iodin control influences the conductivity of the nervous system and through this action oxidation and metabolism of the body.

The adrenals are powerful activators of the central nervous system. Hyperactivity of the adrenals produce practically the same chain of symptoms as the primary hyperactivity of the thyroid gland, namely, "increased metabolism, increased thyroid activity, increased blood pressure, increased pulse, increased respiration, leukocystosis, increased sweating, dilatation of the pupils, and diversion of the blood to the surface." So that there is an inter-dependence between these two glands. Thyroidism increases adrenalism and adrenalism increases thyroidism. Moreover, the same activating factor which produces a thyroid crisis, such as pain, emotional excitation, infectious diseases, etc., produces an increased output of adrenalin.

We know that the injection of adrenalin into the body produces a purely temporary effect, therefore it is reasonable to suppose that prolonged adrenalism is caused by a constant activating drive upon the adrenals or from disease of the adrenals themselves. This explains why, after a successful thyroidectomy there is an almost immediate amelioration of the symptoms which might be attributed to either the thyroid or adrenal, namely—slowing of the pulse, decrease of fibrillar tremor, decrease of blood pressure, clearing of the glycosuria, relaxation of the mental excitement, etc.

There is a small group of cases with the symptomatology of hyperthyroidism which does not respond to extensive thyroidectomy even with repeated operations. With the removal of practically all the thyroid gland and a persistance of symptoms it must be assumed that the adrenals are involved and consideration given to the advisability of de-nervation of the adrenals. Crile recently reported very good results in a series of 120 cases in which de-nervation was done. He selected this operation in preference to thyroidectomy in several cases of professional singers in whom a thyroidectomy would have endangered their professional activities. His results were satisfactory.

The relationship between the thyroid and pituitary gland is very problematical. Hypopituitarism may resemble myxedema. The infantile sexual organs, the scantiness of pubic hair and the long tapering fingers are suggestive of myxedema. However, the bitemporal hemianopsia and the enlargement of the sella turica as shown by the X-ray are pathognomonic of hypopituitarism. Hypopituitarism causes an atrophy of the thyroid gland and in a few years there is a definite inactivity of the thyroid. An interesting clinical factor in these pituitarothyroid deficiencies is an increased ometabolic rate rather than a decreased rate as would be expected from the pathology. Engelbach claims that these cases respond nicely to treatment by the combined extract of both glands. No improvement is noted from treatment by the extract of either gland alone.

The relationship between the gonads and the thyroids has been well established both by experimental and clinical observations. We know that physiologically the thyroid activity increases during menstruation and pregnancy. With a decrease or withdrawal of thyroxin (hypothyroidism) the following clinical facts occur:

1. Puberty occurs earlier than normal.
2. Menstruation is more prolonged and profuse.
3. The flow is free from symptoms of dysmenorrhoea.
4. Sterility occurs in the more severe inactivities.
5. The climacteric is delayed beyond the age of 45.
6. Replacement treatment tends to correct the above abnormalities.

In cases of increased supply of thyroxin to the ovaries (hyperthyroidism) the following is noted:

1. Menses appear 1-2 years later than normal.
2. Menses are scanty and short.
3. Dysmenorrhoea is more frequently present.
4. Fertility is maintained.
5. The climacteric often occurs earlier than 40.
6. Thyroidectomy relieves many of these symptoms due to hyperactivity.

The relationship between the thyroid and the thymus is more vague. Von Houseman found that 75% of thyrotoxic cases had a marked thymic hyperplasia which was more frequent in younger than older patients. Kocher noted that this hyperplasia decreased after thyroidectomy. It is generally agreed that the activity of the thymus has a depressing or sedative effect through the vagotonic division of the involuntary nervous system. At the present time the relationship is so little understood as to make an interpretation impractical.

In conclusion of this resumé of Goiter, the impressive fact which predominates is that, while Goiter is primarily a disease of the thyroid gland, it is intimately connected with and related to the other endocrines, and that the thyroidal symptoms may mask the symptoms produced by pathology of the other ductless glands.

REFERENCES

Endocrine Medicine Vol. 11-111, Engelbach.

The Thyroid Gland, Crile and Associates.

Transactions American Association for Study of Goiter—1932.

MIGRAINE

OLIVER C. NICKUM, M. D.,
Omaha, Nebraska.

A review of my records of thirty-two cases of migraine, many of which were seen under the regime of a sanitarium for nervous disorders and which responded favorably to an unusual therapy, seems to justify a few conclusions as to causation in this symptom complex. These cases had in common a periodicity of occurrence with intervals of complete freedom. An aura was present in most which varied from a slight increase in awareness or sense of something impending to light flashes and visual images. One case gave as his warning of an attack a feeling of euphoria. The age range was from 18-60, and in the main were the over-anxious irritable, intelligent type. Slow pulse and respiration together with slightly subnormal temperatures and low blood pressures were the common findings and these persisted after the onset of the hemicrania in contrast to the findings associated with most other types of pain. The attacks quite definitely followed not mental fatigue from overwork but rather situations of dilemma or frustration which induced a mild depression or sense of futility and prevented a decisive course of action. There was often a night of apparent sleep between this and the onset of the hemicrania which in the majority began in the morning but close questioning as a rule showed the sleep to be fitful and afford little if any rest. Also many of the cases showed in their personal or family histories other phenomena of easy response to emotional tension as urticaria, pylorospasm, bromidrosis, spastic colon, etc. It was also obvious that vacations, surgery, pregnancy, business or social success or any new emotional incident of sufficient intensity would give much longer intervals of freedom from attacks than usually enjoyed by these sufferers.

This group had all tried sedatives of various kinds and considerable quantities but in the main accomplished little with them beyond prolonging the attack into the second or third day except in a few who found a moderate dose used at the earliest moment plus the most complete retirement from stimuli would occasionally abort an attack. The cases were seen in the course of making rounds on a variety of types of nervous upsets and the similarity of complaints and physiological findings to those of melancholia were noticed. In this latter group the hyper-excitability of all sensory organs and the low pulse, temperature, respiration and blood pressure were the obvious factors. A few of such melancholia cases had been given one or two cc of 1/1000 adrenalin to combat the characteristic accentuation of these manifestations which appeared in the mornings and several patients who could not depend on their own momentum until around one or two o'clock became somewhat more alert about ten or eleven and took on the appearance of greater vitality following this treatment. This led to a trial of adrenalin in these cases of migraine with a result that ranged from distinct amelioration of symptoms to complete stopping of the attack when it was used early and with some form of increased sugar intake. One case seen after four days of hemicraine, photophobia, tinnitus, vertigo, vomiting, who had used full amounts of sodium amytal was given two cc of 1/1000 adrenalin followed in one-half hour by 7½ grains of caffein sodium benzoate obtained sufficient relief to be able to eat two meals and remained fairly comfortable for most of that day. The symptoms again recurred and again responded favorably to adrenalin. The attack completely subsided two days later and the rather fixed idea of the patient that refraction errors were responsible led to the prescribing of lense changes with the result that there has been no recurrence of migraine for a longer interval than enjoyed for several years. However, according to her occulist (Dr. J. T. Maxwell of Omaha) the error was slight and to his mind hardly accounted for the attacks. He also expressed the generality that it most be remembered that if refractive errors exist their effect is continuous and not sporadic and hence only contributory and not causative as relates to migraine. This seems true of the other special sensory organs for regardless of their disfunction and contribution to the picture of migraine their examination between attacks offers too few indications of abnormality to give them much primary blame. The first conclusion, therefore, seems to be that migraine is evidence of fatigue of the system as a whole rather than disfunction of one or more special sensory organs causing it reflexly.

Another type of headache frequently observed in Chicago is that occurring to persons while in the Loop who are not subject to headache when in the residential or suburban areas. This type is transitory, insidious in onset and definitely follows two or three hours spent in the more tense and active atmosphere of the downtown section, and is also definitely relieved by the ingestion of orange juice, chocolate, coffee with sugar or some other quick way of restoring sugar balance plus the brief period of rest necessary to obtain it. This milder type of headache seems to match migraine in enough characteristics to group the two for a second conclusion that migraine has a phase preceeding the aura which might be termed the building up phase and seems best explained by Cannon's observations on the excessive expenditure of the products of the glands of internal secretion through compulsive response to emotional stimuli of pain, hunger, fear and rage. These in degree seem active in the building up phase for an attack of migraine. Favorable therapeutic results do not necessarily prove a theoretical concept but it seems reasonable that the mechanism creating the symptom complex known as migraine is a combination of glandular and vasomotor overstimulation during the building up phase with the opposite appearance of exhaustion during the attack itself. Although this group was not checked by blood sugar or metabolism determinations it seems probable that an undue expenditure of glucose reserve occurred before the attack with a deficit present when the manifestations became evident.

Textbooks on medicine suggest multiple causes for migraine without offering a preponderance of evidence toward anyone of them and suggest only sedatives and a complete retreat for therapy. Henry A. Riley, in an article of 100 pages in the Bulletin of the New York Neurological Institute, November, 1932, which was later abstracted by Peter Bassoe for the 1932 yearbook of neurology and psychiatry, gives the various theories of causation with detailed criticism of each. According to Bassoe "the article assembles all that has been said or is to say about migraine." It states "that the reflex and central theories can be disregarded without discussion. The allergic theory presents a great mass of clinical evidence but explains in no way the essential mechanism of migraine . . . . The duodenal stasis theory may be taken as typical of the group of so-called toxic causes. The absorption of material may set in motion certain processes which may eventuate in migraine but this still leaves untouched the central nucleus of migraine and its mechanism." He suggests that the cessation of migraine during pregnancy offers strong evidence for the theory of endocrine responsibility and that the production of migraine in susceptible types by hormone injection offers a worthwhile field for investigation. He favors most of all the role of the vasomotor apparatus as the most plausible explanation for the varying manifestations of the disorder and says "the scanty evidence brought forward by the surgical treatment of this symptom complex is incomplete but very suggestive as the various procedures elaborated to relieve the condition all introduce the factor of the removal of the efferent vasomotor impulses or the interruption of the inward flow of afferent stimuli." And concludes with the suggestion that "the future investigation look to the hypothesis that a perverted hormonal balance is the inciting agent and the resultant action of a disordered vegetative nervous system provides the mechanism for the attack."

The third conclusion I make is that with clinical evidence of excessive call on the endocrine system resulting in an apparent hypoglycemia as the most obvious predisposing factor to an attack that therapy should be stimulative and supportive rather than sedative. Also even though this still results in symptomatic rather than basic treatment it is more direct than the attempts at sedation, and in conclusion seems to indicate that more complete avoidance of attacks must be approached through attempts at environmental and philosophical correction in the hope that the avoidance of inter organ strife will relieve a strain that the constitution of these afflicted seems too poorly integrated to tolerate.

THE PERFECT HOST

Doctor: "Now before I examine you, may I ask what you drink?"

Patient: "Thank you, doctor. A small whisky and soda for me."—The Humorist.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor..........Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman..........Madison
A. F. Tyler..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex Officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. XIX January No. 1

1934

New Year Invocation

As time begins where past time ends,
And old to new in life's span blends,
I pray for blessings on my friends:
God's jewels rare,
Whose lives impinged upon the gray
Of mine make beautiful the day,
Until the shadows slip away
In radiance fair.

And if, perchance, there shall be foes,
I pray that as the New Year grows
Their hearts may change, that ere its close,
Their fault or mine,
Shall not withhold their happiness.
What right have I to joy possess,
If e'en my foes feel no caress
Of Love Divine?

Then, if in blessings some must lose,
(Although 'tis not for me to choose)
I offer Thee myself to use,
Nor murmur, Why?
If some one's peace demanded be,
And sacrifice be need to free
A friend or foe, if willed by Thee,
Let it be I.

—CHARLES ELBERT WHELAN.

SUGGESTIONS FOR SCHEDULING ANNUAL MEETING PROGRAMS

Within very recent years modern business methods have been adopted by some independent medical groups for the better conduct of their scientific sessions, much to the benefit of those attending. These methods have consisted largely, first, in having a program director and second, in so scheduling the work that there was something going on all the time.

Lack of these two prerequisites has forestalled continued interest in many a meeting of the State association. We must not condemn the annual meetings of recent years; but we may together seek to improve methods.

The program director will see to it that all sessions open on time, and that each speaker is on hand to take his place on the program on the hour and minute scheduled and that he has an audience. When attending physicians learn that everything about the meeting goes by the clock, they will be on hand. Delays and dilly-dallying kill interest.

There should be general sessions for the guest speakers, the induction of the president, the reports of the delegates to the A. M. A., annual meeting, the report of the delegate to the council on medical education and hospitals, and the chairmen of the sections. The state talent could have meetings in two sections, medical and surgical at hours not to interfere with guest speakers and others mentioned. Guest speakers should be alloted one hour each and state talent thirty minutes, for paper and discussions. Further discussion can be had at the end of the half day program, if time allows.

The last half day's program could be a general meeting, scheduling the last guest speaker together with such papers as are neither medical nor surgical, but on economic subjects.

A diagram is offered to illustrate, in a general way, the suggestions herein contained.

It will be noticed that special provision is made for two matters that always present a problem. The last meeting of the House of Delegates which needs more time than heretofore allotted and consideration for the banquetters who are always late the morning after, by opening the scientific program at 9:30 instead of 9:00 as heretofore.

FIRST DAY—MORNING

9:30 Opening Exercises

10:00 First Guest Speaker

	Medical Section	Surgical Section
11:00		
11:30		
12:00		

12:15 Buffet Luncheon followed by talks on Medical Economics.

1:00 to 2:00 House of Delegates

FIRST DAY—AFTERNOON

2:00 Induction of President

3:00—Report of Delegates to the A. M. A.

	Medical Section	Surgical Section
4:00		
4:30		

SECOND DAY—MORNING

8:00 House of Delegates

	Medical Section	Surgical Section
9:00		
9:30		

10:00 Chairman. Medical Section

10:30 Report—Delegate to Council on Medical Education and Hospitals.

11:00—Second Guest Speaker

12:15 Buffet Luncheon followed by talks, etc.

SECOND DAY—AFTERNOON

2:00 Third Guest Speaker

3:00 Chairman, Surgical Section

	Medical Section	Surgical Section
3:30		
4:00		
4:30		

BANQUET

THIRD DAY—MORNING

House of Delegates

9:30 Fourth Guest Speaker

10:30 Announcement. Result of Election and Presentation of P. E.

	Medical Section	Surgical Section
11:00		
11:30		

AMEBIC DYSENTERY

Amebic dysentery has become a real health hazard in North America. Beginning among employees and guests of Chicago hotels and eating establishments about May 1, 1933, the disease has been widely spread by Century of Progress visitors upon their return home. On November 18 the Chicago Board of Health(1) stated there had been in Chicago 19 deaths in 185 clinical cases, while 193 carriers had been detected. By November 14 one or more cases were reported from 50 widely scattered cities in the U. S. and Canada. A number of cases have appeared in Nebraska and more may be anticipated. Realization of the danger will lead to alertness in diagnosing individual cases and protecting the public health.

Amebic dysentery is now frequently seen in temperate zones, although originally considered a tropical disease. It is caused by invasion of the wall of the colon by a small parasite, Endamoeba histolytica, ingested in the form of tiny resistant cysts usually in contaminated water or food. Most commonly the cysts, which later develop into active amoebae, are brought to food by the hands of a person either suffering from the disease or acting as a carrier. In either case he discharges in his own feces the resistant cysts, and neglects the careful washing of his hands after defecation. Less often contamination follows the use of sewage for fertilizing vegetables, or is due to transmission of cysts by flies or contamined water.

The Chicago epidemic exemplifies the importance of the food handler in spreading disease. When the first cases were reported in Chicago, August 15, suspicion centered at once upon the food handlers. By September 1(2) 364 food handlers were examined, disclosing in the group fifteen active cases and eleven carriers. In the infected group were five cooks, one sauce maker, two butchers, five dishwashers, two counter girls, one waffle girl, seven waiters, and one pantry boy.

The present epidemic was possibly caused by a chronic carrier, a baker among the food handlers, found to be a chronic carrier in a previous Chicago epidemic in 1927. He had been pronounced cured after many negative laboratory examinations of his stools, but again in the present epidemic his feces were found to contain endamoeba cysts. Such findings suggest that such an individual should be placed in the same category as "Typhoid Mary."

Humans infected with the amoeba may become acutely ill, or the disease may be chronic. The incubation period is from 9-94 days, but usually over eighteen. In acute cases the onset is sudden, with severe abdominal pain, and often nausea and vomiting. Diarrhoea becomes serious, often with fifteen to twenty movements in twenty-four hours. At first the stools contain mucus, but soon become fluid and contain mucus, blood, and shreds of colon mucosa. Tenesmus is severe, and there is weakness and often collapse. Fever is infrequent. The symptoms and course are quite variable, and a diagnosis of appendicitis may be made because of pain in the right iliac region. In four cases of unsuspected amebiasis occurring among members of the lumber trade who attended a meeting in Chicago June 30 to July 2, 1933, three had abdominal operations and the correct diagnosis was made at autopsy.

In the presence of an epidemic, diarrhoea suggests the disease. The typical attack will not usually be overlooked, but there are many mild and atypical cases. The final diagnosis rests upon the identification of the parasite in the stools. A small portion of the bloody mucus from the fresh stool of an acute case, mixed with a little warm physiologic salt solution, will reveal the motile amoeba. Cysts may best be identified in the stools of carriers or more chronic cases by emulsifying a little of the feces in Lugol's solution or Donaldson's iodin-eosin solution. In chronic cases one may detect carriers by culturing the feces on liver infusion agar slants over which diluted horse serum has been streaked.

For control measures in the presence of an outbreak, the outline of Tonney, Hoeft and Spector(2), is basic, and can be modified to suit the circumstances:

1. Prompt isolation and treatment of all cases and carriers found among the food handling personnel.

2. The promulgation of stringent hand washing and disinfecting regulations, with monitors posted in the toilets adjacent to the kitchens to see that these rules were carried out.

3. The placing of placards bearing an order to wash and disinfect the hands, in all nearby toilets used by employees.

4. Increasing the hand washing conveniences by installing additional wash bowls throughout the kitchen quarters.

5. General cleaning and painting of the kitchens, pantries and store rooms in the entire plant, to promote the psychology of cleanliness.

In addition to the emergency control measures, all food handlers once infected should be examined monthly for four months, and thereafter every six months while handling food. Danger of recurrence of the disease is ever present. The carrier is a constant menace. Because of the tendency of food handlers to drift from one hotel or establishment to another, it is necessary for such places to insist upon examination of all applicants for work in the kitchens and dining rooms.

For methods of treatment, see review article in J. A. M. A. Nov. 18, 1933(3).

—B. Carl Russum, Omaha.

BIBLIOGRAPHY

1. Bundesen, Herman N.; Rawlings, Isaac D., and Fishbein, Wm. I.: The Health Hazard of Amebic Dysentery. Report of an Outbreak, J. A. M. A., 101: 1636 (Nov. 18, 1933).
2. Tonney, Fred O., Hoeft, Gerald L., and Spector, B. K.: The Threat of Amebiasis in the Food Handler, J. A. M. A. 101: 1638 (Nov. 18, 1933).
3. Amebic Dysentery, A Review: J. A. M. A. 101: 1639 (Nov. 18, 1933).

"LIFE IN THE MAKING"

In recent years we have heard much of the problems relating to childbirth. The White House Conference on Child Welfare and Protection and the recent expose of the New York Academy of Medicine on Maternal Mortality have made astounding revelations. The lay and medical press have contributed largely to the spread of the findings of these organizations and have deepened the conviction in the minds of the medical profession and the lay public that there is something radically wrong with obstetrics in the United States.

We learn from the report of the New York Academy of Medicine that 62.8 per cent of the 1,343 maternal deaths that occurred in New York City in the past three years should have been prevented; that 61.1 per cent of the preventable deaths are charged to the doctors. 36.7 per cent to the patients and only 2.2 per cent to the midwives. Anesthetics, excessive operative intervention, lack of prenatal care, faulty judgment and lack of skill are the principal factors which enter into the deplorable showing of the medical profession.

Because of the gravity of the situation we welcome every contribution to the science of midwifery that will better equip the doctor for this task and give to the childbearing women such information as will make possible intelligent cooperation.

Now comes another noteworthy contribution to the cause of better obstetrics. It deals with basic problems which are all essential to a clear understanding of midwifery. Dr. Alan F. Guttmacher, Associate in Obstetrics in the Johns-Hopkins Medical School and Hospital, is the author of a book which bears the title "LIFE IN THE MAKING".

"Man," says the author, "has a special right to know how he is made: he needs to understand the process which created him and by which he in turn may create new life." Then follows the story, written in a most engaging style, of how "Science Points the Way." It is the story of the ovists and the spermatist; how they contended for their philosophical concepts, with the ovists having the better of the argument. With the discovery and description of the sperm and the ovum all controversy ceased; the honors were equally divided between the two elements. Both were essential to fertilization "but how did sperm and egg join to form the embryo?"

The following chapter deals with fertilization. It is a fascinating presentation that cannot fail to grip the reader as he is carried "step by step along the road to understanding." Chapters on Sexual Rhythms, Behaviour in Primates, Castration, Transplantation and Chemical Extraction of the Sex Hormones are replete with scientific data and yet written in language so simple that a layman can understand. The author, in writing of hormones, raises the question as to their therapeutic value. "Can we cure humans by it?" "The truthful answer is, not yet." And Dr. Guttmacher is right. Says he: "A study of sex hormones has taught us much about the works of the ovary and the testes. With this knowledge as a background, we are now prepared for new discoveries—discoveries that may rob senility of its sexual impotence and castration of its devastating symptoms, that may cure menstrual irregularities and pain, that may make the sterile fertile and enable the woman who has repeated miscarriages to carry her pregnancy to term."

The subject of sex determination is discussed from an historial standpoint and leaves us just where we began, with no known means of determining the sex prior to birth. "When the child is delivered, when it lies upon the cushion, then, and not before, can we tell whether it is a boy or a girl." The subjects of Sterility and Fertility are presented in a practical, entertaining manner. Finally much space is allotted to the discussion of Twins, Like and Unlike Twinning and Twins as a Measure of Heredity.

This book should be read by all who are interested in biological problems, by all students of medicine and nursing, by doctors everywhere. It is a dramatic presentation of a subject that is of vivid interest to all who would know the secrets of "Life in the Making."

—Palmer Findley, Omaha.

A REPERCUSSION ON SUPER VOLTAGE RADIATION

To the Editor:

Realizing that you are always anxious that your columns never contain any statements which might be erroneously interpreted or give rise to false impressions, I am writing you concerning some features of your editorial on the present status of super voltage therapy.

The relative power of penetration possessed by radium and high voltage x-rays may be determined by reference to any standard text. No tube or x-ray apparatus has yet been devised which even approaches the power of penetration of radium. (See also quotation below from *Journal of Cancer,* where it is stated that in radium we have available the equivalent of six million volt x-ray apparatus).

The statement that "radium has some disastrous cautery effects while x-ray is without cautery effect" is very new indeed and without any foundation in fact. It is admitted by all that radium used without due consideration for the proper technical requirements of the given case results disastrously and likewise it is admitted by all that x-rays of any character used without due consideration for the proper technical requirements of the given case also results disastrously. The present day treatment of malignancy depends upon the proper combination of x-ray, radium and surgery, and we are rapidly learning that the use of the three agents combined in the majority of cases gives the best result, at least there are instances where one or more of these methods are indispensable for the proper management of the case and all three have so much to recommend them that no one is justified in criticising any of them.

The present status of super voltage radiation therapy as far as the radiologist is concerned is well stated in an editorial in the *American Journal of Cancer* of March, 1933, Vol. 17, No. 3, page 790. Following are some quotations from that editorial:

"The most experienced workers with radium and moderate voltage x-ray regard these agents as equally effective under the same conditions. Even the most enthusiastic worker with radium has failed to show that this agent has produced any extraordinary therapeutic effects not shared by x-ray, except when it is possible to obtain an intense local action by insertion into the tissues. It is, therefore, very doubtful that unusual curative possibilities lie in a million volt x-ray, for six million volt x-ray is available in radium. So far, two institutions have been studying the effects of 600 kilovolt x-ray, and while excellent results have been reported no claim is made that they surpass those seen after the intelligent use of 200 kilovolt radiation. All such problems which involve the radiation of masses of tissue must be done on human beings in order to obtain the necessary bulk for back scatter, which is not present in the smaller experimental animals whose tumors are available for such work. Unquestionably, greater penetration into tissues will be obtained at higher voltages, but theoretically the removal of the x-ray tube to a considerable distance will give a depth dose equal to that obtained at the highest experimental voltages at present available. For this and many other reasons the practical use of x-radiation will for a time remain at voltages not to exceed 300 kilovolts, which is the present limit of commercial x-ray tubes. The moment this commercial limit is passed, a type of apparatus is necessary the expense and difficulty of handling of which are entirely out of proportion to its therapeutic value, so that it is preferable to place the money available in radium, because of the greater convenience and ease of application of that substance. Cost is of immense importance, for the vital fact is that radiation should be available for the many rather than limited to the few victims of cancer who have large means.

"In a few years these matters will be finally settled, for in that time sufficient clinical experience will be obtained to show, in all probability, that there is no advantage in very high voltages, and that ample internal radiation may be obtained by the use of a number of portals, while the disadvantages of high voltages from the engineering standpoint will be compensated for by tubes whose capacity to carry current will enable them to be run at such a distance from the patient that the depth dose will approximate that obtainable at very much higher voltages.

"The physicists, therefore, who have suggested that a million volt x-ray will do wonders in the curing of cancer had better return to their own problem of fracturing the atom. For the real question in the treatment of cancer today is the adjustment of the dosage administered to the biological rhythms in the cancer cell and the surrounding healthy tissues, and of all the variables entering into the practical problem, the wavelength of the radiation as determined by the voltage is probably the least important."

From the above editorial it is apparent that in addition to the question of voltage there are many variables present in the management of any cancer case and a knowledge of this fact is at least as important as is the matter of voltage.

The problem of post-irradiation nausea has been easily handled by all radiologists since the epic marking work of Doub, Bollenger and Hartman, *American Journal of Roentgenology and Radium Therapy,* Vol. 13, No. 1, January, 1925, pages 54 to 64, in which the value of calcium in prevention and therapy of radiation sickness was so thoroughly proven.

As regards the inability of 200 kilovolts to deliver sufficient depth dosage one need only refer to the recent article "X-radiation in Cancer" by Mattick, *Journal of the Americal Medical Association,* December 24, 1932, in which he states that with the use of 3 mm. of copper, 80 cm. distance, 20x25 cm. portal of entry at 200 kilovolts he delivers 58.5% depth dose at 10 cm. below the surface. This will serve to bear out the statement in the above quotation that one may do as well with the intelligent use of 200 kilovolts as with the use of 600 kilovolts and definitely disproves the contention that one is unable to deliver a satisfactory depth dose when using 200 kilovolts.

The problem of malignancy can only be properly approached by a thorough knowledge of the fundamentals involved and statements liable to give rise to false impressions should be avoided at this time when so many features of the problem are still unanswered.

—James F. Kelly, Omaha.

CALL FOR PAPERS

If you wish to read a paper at the next annual meeting in May, 1934, please send your title and name to R. B. Adams, Secretary, Center McKinley Bldg., Lincoln, Nebr.

ALLERGY HINT XI

Sensitivity to drugs should receive careful investigation, especially when the usual allergic procedure fails.

—Edw. S. Maloney, Omaha.

ALLERGY HINT XII

The successful solution of allergic problems depends upon a knowledge of probable factors, a keen imagination, and the full cooperation of the patient.

—Edw. S. Maloney, Omaha.

TUBERCULOSIS HINT

There is no chemical nor serum that will cure tuberculous disease, and considering what we know of the etiology, pathogenesis, and immunology of tuberculosis there never will be. The only relief is prevention; and the only visible hope at present of active prevention is some imitation or approximation of Nature's method of immunization.

—Miles J. Breuer, Lincoln.

EDITORIAL PARAGRAPHS

The New Year is here: let us look toward the rising sun.

It is said that there is nothing sure but death and taxes. It is sure that your dues should now be paid.

The 1934 annual Clinical Congress of the American College of Surgeons will be held in Boston, October 15 to 19.

Communing with a professional friend recently on the financial situation he remarked he was not "busted" but *stretched.* Most of us are badly stretched.

A cordial invitation is extended to physicians to attend the American Conference on Birth Control and National Recovery, to be held at the Mayflower Hotel in Washington, D. C., on January 15, 16 and 17, 1934.

So far nothing has been done by the officers of the Nebraska State Medical Association toward getting a part of the Emergency Federal Relief money for medical care for the indigent, beyond obtaining information. The matter, it is understood, will go over to the annual councilor meeting January 15.

There are now in this state at least three "Tri-county," medical societies which is altogether too confusing. The first one so organized we believe, was the Burt-Dodge-Washington group. Now there are the Hall-Howard-Merrick group and the Kimball-Cheyenne-Banner group, all using the appelation "Tri-County."

Let us not forget that we belong to a profession having supposedly some scientific and literary background. There is no such word as "hemorrhaging" in the English language. One occasionally hears the expression from nurses and rarely from physicians; but there is no such word in the dictionary.

Commenting on the fact that at the present time, due to financial conditions there is a lot of "nervous indigestion" a writer says: "It is a time which calls for a living above troubles, a smiling in the face of danger, a determination that every man is master of his own thoughts and therefore of his own future well-being. To give way to despondency is to surrender that which makes a man master of himself, and through that mastery, of his environment."

Dr. Herman Bundesen of the Chicago Board of Health, in a circular letter to organized medicine, says: "To date there have been reported 419 cases of amoebic dysentery, involving 138 cities, with a total of 26 deaths. Apparently these cases originated in Chicago. We have also discovered 384 carriers. I shall appreciate it if you will advise me of any cases with a possible Chicago origin that come to your attention, and I shall keep you informed, from time to time, as to what is occurring."

The layman occasionally has views on medical economics that are worth while. Here is one from the Rotarian: "This summer I went to a doctor to have a medical examination in order to obtain a marriage license. The state law of North Dakota requires this. The doctor put the stethoscope to my lungs, asked if I had any venereal disease—and signed the medical permit, and charged me two dollars. If this is an example of medical individualism—may the Lord preserve us, the doctors won't." To which we say, "Amen."

"Barnstorming" was a term formerly applied to itinerant theatrical groups, who gave performances in small towns and villages; later it was used by aviators who dated country towns and county fairs, taking passengers aloft at so much per person; recently we heard it applied to physicians from metropolitan centers who give programs at county medical society meetings. Whether the term is properly applied or not, it is certain the programs given by physicians from the larger cities are appreciated by physicians from the rural districts.

Commenting on the declining death rate, which in 1929, at the heighth of prosperity, was 12.1 per thousand and was 10.9 per thousand in 1932, with probabilities that the 1933 death rate will be about the same as that of 1932, the editor of *Collier's* says: "As a nation we suffer more from excesses of life than from restraint." There are good reasons to believe that this is true. Is it not possible that just "vittles and drink" after all contain all the needed vitamines. Someone has said "Nature provides for a heap of things."

Normal street traffic (non-rush hour) of around 2,000 vehicles per hour crossed a Washington, D. C., street intersection with least delay when under no control, and two hours of peak traffic caused as much delay as eight hours of normal traffic. These conclusions were among the results of a traffic study made by the Bureau of Public Roads as reported by E. H. Holmes, assistant highway economist, to the annual meeting of the Highway Research Board of the National Research Council which opened today (December 7) in Washington, D. C.

Application blanks are now available for space in the Scientific Exhibit at the Cleveland Session of the American Medical Association, June 11th to 15th, 1934. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. The final date for filing applications is February 26th, 1934. Any persons desiring to receive an application blank, should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

HOW TO GO TO SLEEP

Dr. Victor E. Levine, Omaha, in a feature article recently, told the public how to go to sleep:

What means do you employ to fall asleep when you find that sleep does not come to you naturally? This question was put to friends and acquaintances and here are some of the replies:

Count sheep—if you are not really interested in sheep. If you have no personal interest in this docile animal you soon become tired of the mathematical monotony and away you sail into sleep.

Repeat the multiplication table or Lincoln's Gettysburg address.

Do something that bores you to death. Invite for the evening your neighbor who always speaks of her operations, who frequently reminds you that her ancestors came over on the Mayflower, or who dilates on her trip abroad. Play bridge with a partner who cares little and knows less about the game, but plays just to be polite.

Spend the evening with the biggest bore you know. When he leaves, you will be so tired and sleepy that you will flop into bed without the least desire to take off your clothes.

Read something heavy in style, like some of Thomas Carlyle's or Samuel Johnson's work or something too difficult to grasp in thought, like some book on abstract philosophy.

Eat onions before going to bed. That was the advice given by a bachelor. He said onions have something in them that makes one drowsy in no time.

Take a hot glass of milk or some hot gruel before retiring. Heat relaxes the muscles of the body and settles the nerves.

If a democrat, read a speech by a prominent republican. If a republican, read a speech made by a famous democrat.

Take a good long walk before turning in for the night.

Go to bed, turn out the lights or dim them, and keep peering into the dark until your eyes close from sheer strain.

Spend 10 or 15 minutes in exercise, then go to bed and relax every one of your muscles.

Go to bed and start in your mind a fishing trip, arrive at some lake in Minnesota, get into a boat, unreel your line, and wait for a nibble. Keep on waiting.

While in bed (advises a locomotive engineer), get on an engine and start it on its way to the Pacific coast. Make a smooth run and stop at every town. Before you reach Salt Lake City you will be fast asleep.

Some people (comments a private secretary), will not fall asleep no matter how many devices they employ. These are the nervous people who are so afraid they won't go to sleep that they lie awake worrying about it.

OBITUARY

Verne V. Vance, Peru, Nebr.; University of Nebraska College of Medicine, 1903; member, Nebraska State Medical Association; died, after a long illness, November 25, 1933, aged about fifty-five years. A widow survives.

Charles W. Hendrickson, Amherst, Nebr.; Ensworth Medical College, 1908; member, Nebraska State Medical Associatoin; died suddenly November 21, 1933, aged about forty-seven years. A widow and two children survive.

Charles A. Shoemaker, Lincoln, Nebr.; University of Nebraska College of Medicine, Homeopathic, 1886; in practice in Lincoln for forty-seven years; died November 27, 1933, aged seventy-two years.

William Berry, Omaha; native of Burlington, Iowa; Starling Medical College, Columbus, Ohio, 1888; practitioner in Omaha 46 years, until within recent years in South Omaha; member, Nebraska State Medical Association; a faithful student of current medical literature; a pediatrician; died suddenly, December 3, 1933, aged seventy-one years. A widow, two daughters and two sons survive.

Ernest S. Case, Los Angeles, Calif.; Nebraska University College of Medicine, 1895; former physician at Curtis, also sometime banker of Stockville; in poor health for a number of years; died in a suburb of Los Angeles, recently, aged about sixty-one years.

Peter L. Gillespie, Wymore, Nebr.; Creighton Medical College, 1901; in practice in Nebraska for thirty years at Beatrice, Wymore and Falls City; died at Lincoln, December 17, 1933, aged about fifty-eight years.

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS OF THE LANCASTER COUNTY MEDICAL SOCIETY

Interesting findings and recommendations of the Committee's very commendable study, follow:

"Brief summaries of conclusions have been given here and there throughout the text. There will be no attempt at complete deduction, except what is necessary in the explanation of the recommendations. The study has dealt with a local community, without the problems that arise in industrial centers or where there is a large unassimilated foreign population. Yet the factual findings and the conclusions in the main parallel the report of the National Committee on "The Costs of Medical Care." This survey is presented for the welfare of the citizens of Lancaster county, and to prevent exploitation of the medical profession.

"The study shows: (1) That the costs of illness fall unevenly on the various families in the population at large; (2) That many people cannot afford to pay for adequate medical care—some cannot pay at all, some only in part; (3) That physicians are unevenly compensated, many receiving very poor pay, a few showing large earnings, and the average, while not large, probably being about adequate.

"It appears especially fortunate that: (1) Only a small portion of the population is cared for at free clinics. (2) A fair share of the medical dollar goes to the physician. (3) The income of the general practitioner is relatively larger and the income of the specialist relatively smaller than in the country as a whole. The general practitioner has an equal opportunity with the specialist for adequate earnings. (4) While a few physicians are devoting considerable time to free clinics at small or no remuneration, yet the profession is comparatively free from donated service except in private practice in the form of charity, gratuitous benefactions, and uncollected bills. The loss in collections is unusually large even in good times.

"The quality of medical service given in Lancaster county is adequate and compares favorably with the advantages of the best science has to offer in the other parts of the country. The profession is alive to the necessity of keeping abreast of the progress in medical science for its own good and for the welfare of the people. It is ready to assume leadership when changes are necessary or circumstances may force them.

"The Committee Recommends:

"1. Agreement in the main with the first minority report of the National Committee on "The Costs of Medical Care." This report requires no revolutionary changes in customs established by time; it will leave no intervening period of chaos, and no uncertain phase of experimentation in a type of service to which the people are totally unaccustomed.

"2. Cordial cooperation with the city and county to be continued, especially during the present period of distress, and with all of the welfare agencies which are overburdened at this time. But preventive measures, educational and otherwise, should make up the greater part of the program of all public health agencies.

3. That the Lancaster County Medical Society maintain a permanent committee for the study of economic problems of vital interest to it and to the community it serves. Cooperation on the part of the medical profession in economic matters should be on the same high plane on which it has been maintained in scientific matters. Attention is called to the successful organization for autopsies, conduct of hospital staffs, the study clubs, the society's library, and even the county society itself.

"Particular stress should be placed upon those problems this committee has not touched, although those now reported upon should not be lost sight of. Special committees should be appointed to report on:

"a. Industrial medicine and the Workman's Compensation laws.

"b. Information furnished to insurance companies, expert medical witnesses in the courts, contingency employment by plaintiff attorneys.

"c. Contract practice in all its ramifications.

"d. Prescribing, dispensing, and counter prescribing.

"e. Lay encroachment by untrained workers in professional fields, as by technicians, anesthetists, untrained women acting as nurses, etc.

"f. Cooperation in the application of sound business methods to practice.

"g. Cooperation in the use of all kinds of major physical equipment and technical assistance, which brings about expensive duplication in overhead.

"h. Efforts to secure proper official representation on the various hospital boards.

"i. Inauguration of means to secure adequate hospitalization for all open cases of tuberculosis for patients seen in private practice, among the lower income groups and among the indigent.

"4. That the dental profession be invited through our associate members to make a similar survey, which may parallel ours, for their own good and the welfare of the community. Where medicine goes, dentistry goes. The interests are mutual. Mass methods of practice can as easily be forced on dentists as on doctors of medicine.

"5. That the nursing profession continue its studies with a view to correcting its unemployment situation.

"6. That since no great demand for medical insurance is seen either on the part of the people or the profession, that no action be taken now except to warn members of the profession not to sign any sort of an agreement to furnish medical care without bringing the contract to the notice of the society for thorough investigation and concurrent opinion. Should the demand arise, then the Lancaster County Medical Society should consider launching such a program itself, after careful study. In doing so it may at least speak for the profession. A tentative plan should be formulated to be used only if the demand becomes great. The committee on economics should at once begin study on the schemes offered in America and those being tried abroad.

"7. An outstanding feature of this study is that there exists in Lincoln a fairly large group of people having an income of less than $1,900.00 a year, who are not able to pay adequately for medical services. These people are at present receiving service from private physicians and are paying for about 25 per cent of the service. The remainder of the population are able to pay adequately for what service they need. In considering the problem of caring for this lower group, there are three alternatives: First, to continue as at present, accepting the high collection loss and absorbing the increased overhead in total income; the second is to set up some sort of an insurance method; and the third is to divide the load between tax supported agencies and private practice. If we expect the government to provide for the care of the indigent sick, we should look upon the welfare agencies as allies of medical practice rather than as competitors.

"The committee, after careful study, recommends the third plan. The indigent are to be cared for at public expense. The families with lower incomes (under $1,900.00) should be supported by taxation at least to the extent of the supply of preventive measures. It might also be possible to adjust our methods of practice so that patients paying a small fee may be cared for with smaller overhead. The independent calling of specialists by this group should be discouraged as increasing the cost without corresponding benefit to the patient. Visiting nurses and social workers should be instructed that the family practioner is able to care for a large per cent of illness in this group.

"8. Another outstanding defect as shown by this study seems to be the lack of preventive medicine in all groups. The committee recommends that this type of practice be promoted, not only by personal education of patients, but also call lists, cards calling attention to periodic health examinations, immunization against disease, contacting families by general practitioners, in every way proceeding in a manner that is dignified and ethical.

"9. That arrangements be made whereby biologicals such as antitoxin, insulin, etc., and expensive diagnostic work be furnished at public expense to patients who are not absolutely indigent but who cannot afford these things. This need is particularly felt during unemployment.

"10. That the following principles be adopted by the Lancaster County Medical Society as representing its concept of the proper social and economic relationship between the medical profession and agencies for health and medical relief both public and private, and also as a code of fair practice for its individual members associated with medical agencies.

"(1) Agencies, public and private, should confine their medical activities to—

"a. Care of indigent.

"b. Care of nervous and mental disease and tuberculosis.

"c. Promotion and protection of public health.

"d. Accumulation of vital statistics.

"(2) Government should assume the burden of providing medical, hospital, and nursing care for the indigent.

"(3) The physician should be fairly compensated for professional services rendered through public or private agencies, in order that he shall not be obliged to use his position to increase his private practice. (This does not apply to service on boards of any advisory nature.)

"(4) Agencies should be fostered for the purpose of studying, evaluating and coordinating medical service in this community and in this state.

"11. That the Lancaster County Medical Society and its members use their influence and powers both as a society and as individuals to bring to fruition the recommendations of the United States Public Health Service as Outlined, except—

"(1) Item No. 14, the development of out-patient departments in the Lincoln hospitals. This, we believe, would tend to throw the burden of providing medical care to the indigent back on the profession from the government and should be discouraged.

"(2) Items No. 3 and 5, legislative recommendations, which should be referred to the Legislative Committee of the Nebraska State Medical Association with our approval and recommendation for action.

"12. That the medical profession assist the hospitals in obtaining the full cost of hospitalization of the indigent sick from the government agencies to the end that none of this cost will be charged to private paying patients.

"13. That the Lancaster County Medical Society use its powers and influence to put into effect the principles of the plan for the care of the indigent sick by the City-County Health Department which was recently recommended by the society.

"14. That when the City Health Department is reorganized, a cooperative plan be developed by the Department and the Society for determining the eligibility of cases applying for Medical relief, and that a committee be appointed from the Society for this purpose. The economics committee has on file various schemes that have been found workable elsewhere."

TUBERCULOSIS ABSTRACTS

The numerous articles on collapse surgery of the lung in current medical journals reflect a widespread interest in this subject. Pneumothorax, phrenicotomy, thoracoplasty and other means of collapsing the lung are being employed in an increasing proportion of cases. Improvement in technique is progressing steadily. In the October, 1933 American Review of Tuberculosis, forty articles on thoracic surgery, derived from medical journals of six countries, are reviewed. From this collection a few are here presented.

ARTIFICIAL-PNEUMOTHORAX STATISTICS

Artificial pneumothorax is one of the most hopeful and beneficial methods used in the treatment of pulmonary tuberculosis. A survey has been made of a series of cases treated by artificial pneumothorax from 1922 to 1928.

All patients had tubercle bacilli in the sputum before treatment and very few were early cases. Pneumothorax was attempted in 149 cases, out of which 102 were successful. Seventy-five per cent of the patients were between the ages of fifteen and twenty years. Of the successful pneumothorax patients, 29.4 per cent are still alive, while only 1.06 per cent of the unsuccessful ones are alive.

It is impossible to compare accurately these cases with ordinary sputum-positive patients, but there is no doubt that this therapy produces almost immediate benefit.

A Review of Artificial Pneumothorax Cases, G. Hurrell, Tubercle, Sept., 1932, xiii, 542.

TERMINATION OF ARTIFICIAL PNEUMOTHORAX

Whereas the indications are well recognized for the induction of pneumothorax in patients with pulmonary tuberculosis, the criteria for its release are less clearly defined.

Seven factors are involved in the decision that the optimum time has been reached for reexpansion of the collapsed lung: (1) the type of onset of the tuberculous disease, and its course prior to the giving of pneumothorax; (2) the period of time which has elapsed between attempting the pneumothorax, and producing a satisfactory collapse of the affected lung; (3) the rate of disappearance of tubercle bacilli from the sputum; (4) the existing constitutional symptomatology of the patient as compared with that before pneumothorax; (5) the type of refills; (6) the condition of the contralateral side; and (7) the economic status of the patient.

Physical signs by themselves are relatively unimportant, because even a thin film of air may mask or distort marked pathological lesions in the underlying lung. On the other hand, serial X-ray plates, especially those taken just prior to the induction of the pneumothorax, and for two weeks thereafter, are particularly helpful in that they show the degree of parenchymal involvement before collapse therapy. Later X-ray plates may be misleading, as mediastinal structures may overshadow changes in the parenchyma of the lung.

Of the seven factors listed, the time necessary for the disappearance of tubercle bacilli from the sputum constitutes the most important criterion as to the effectiveness of the pneumothorax. At the time of induction it is futile to estimate the necessary duration of the pneumothorax. Satisfactory pneumothorax for one year to one and a half years should be sought for. Occasionally shorter periods suffice, but far more often the clinical course necessitates a longer space of time.

When release of the collapsed lung has been determined upon, the affected lung should be allowed to expand slowly and under careful observation. An average-sized pneumothorax should require two and a half to three months for complete reexpansion of the collapsed lung. In instances in which air-absorption occurs too rapidly, the rate of expansion may be slowed by small refills; in reverse cases, the rate may be accelerated by putting the patient on graduated exercise.

The reappearance of tubercle bacilli in the sputum, or the development of undesirable constitutional symptoms during the release of collapse therapy, are indications that pneumothorax should be maintained. In cases of large cavitation antedating the pneumothorax, a phrenico-exairesis is advised at the end of the period of pneumothorax before attempting a release of the collapsed lung. This measure is also advocated during release of the pneumothorax if untoward symptoms develop as a result of a shifting of the mediastinum.

Ueber den Abschluss der Pneumothorax-behandlung, M. Gross, Munchen. med. Wchnschr., July 8, 1932, lxxix, 1122.

EXPANSION OF LUNG AFTER ARTIFICIAL PNEUMOTHORAX

There have been very few reports on the status of patients in whom artificial pneumothorax has been stopped. In a series of 105 former pneumothorax cases, in which the lung had been reexpanded from one to eighteen years, 81 patients were alive and of these 62 were leading normal lives. Twenty-four patients were dead, and 19 of those living were still "curing."

Most of the cases in this study were in the far-advanced group, and all but 25 had lesions in the other lung, and 75 of these became negative after pneumothorax treatment.

In the patients who are living and well, pneumothorax treatment had closed the cavities and rendered the sputum negative; of those still curing the cavities had not been closed, or extension had occurred to the other lung, or the patients were still recovering from other surgical procedures.

In a group of 38 patients, who had returned to work after reexpansion of the lung, only 3 had relapses in that lung. The former cavity reappeared 3 years after treatment had been stopped in one case; in another case an acute tuberculous process developed in the other lung, followed by cavity-development in the lung which had been originally collapsed, although this new cavity did not appear at the site of the old lesion; in the third case, the cavity reappeared seven years after cessation of pneumothorax.

In another group of 34 patients who returned to work, there were five who relapsed, but the details of the relapses were not known. The total number of relapses in 72 patients who had returned to work was ten, and all of these occurred from 3 to 11 years after pneumothorax was stopped. The average time that pneumothorax was maintained in the 105 cases was 2.6 years.

It is concluded that reactivation following satisfactory collapse is the exception rather than the rule, and that an effective pneumothorax of two years' duration, with a negative sputum for at least one year, gives reasonable assurance that the lung may be expanded with safety. Even in those cases in which the pneumothorax is unintentionally lost at the end of 2 years there is no more danger of reactivation, if the cavity has been closed and the sputum rendered negative, than if the collapse were maintained for longer periods.

The Present Status of One Hundred Pneumothorax Patients After from One to Eighteen Years' Expansion of the Lung, E. N. Packard, J. Thorac. Surg., August, 1932, i. 581.

BILATERAL ARTIFICIAL PNEUMOTHORAX

The application of bilateral artificial pneumothorax on a wider scale is advocated. Selective collapse of the diseased areas of the lung, while permitting function of the healthier portions, is the procedure of choice. Adhesions mitigate against this procedure more than any other factor, and cauterization of adhesions is indicated when possible. When it is probable that a cauterization will enable the healthier parts of the lung to attain a better function and will secure more ideal conditions for a gradual reexpansion of the affected parts, cauterization is indicated, even if the artificial pneumothorax has been clinically successful.

In limited disease the complete thoracoplasty now in vogue should give way to partial thoracoplasty or apicolysis. In bilateral artificial pneumothorax needles with side openings should not be used, as they are more apt to perforate the lung than the ordinary needles. Combinations of methods may be desirable, such as phrenicectomy or plombage or partial thoracoplasty on one side and pneumothorax on the other. A bilateral phrenicectomy has been carried out with relatively good result and without any serious disturbance of function.

A case of bilateral thoracoplasty is reported. The patient, a young girl, was febrile for 18 months prior to the operation, but has remained afebrile ever since. The expectoration, which was rather copious in amount, decreased to about 10 cc. in 24 hours but was still positive for tubercle bacilli.

Selective Lung Collapse in Bilateral Disease, J. Graveson, Lancet, Feb., 18, 1933, ccxxiv, 354.

AUXILIARY NEWS NOTES

The Woman's Auxiliary to the Omaha-Douglas County Medical Society held a health education program followed by an informal tea Monday afternoon, December 4th, 2:30 p. m., at the Fontenelle Hotel.

Invited guests were the members of the Pottawattamie County Woman's Auxiliary and the members of the Omaha District Dental Society Auxiliary.

About 150 ladies were present.

The speakers were Dr. Clyde Moore, chairman of the public school health committee of the Omaha-Douglas County Health Council, and Dr. A. C. Pohlman of Creighton University. Dr. Pohlman demonstrated his talk with mechanical devices used to test hearing of school children.

Mrs. George E. Neuhaus presided. Mrs. Karl R. Werndorff of Council Bluffs, and Mrs. A. D. Dunn of Omaha gave a delightful musical program.

Refreshments were served with the officers of the Auxiliary as hostesses. They were Mesdames Howard B. Hamilton, J. J. Keegan, John J. Freymann, A. Offerman, Charles Pollard, J. A. Berghoff, John R. Nilsson, Thomas Houlton, John Pulver, Harry J. Murphy, John T. Myers, Clarence Rubendall, H. von W. Schulte. Mrs. Keegan presided at the tea table. Others assisting were Mesdames Earl Connolly, M. Howard, and H. Gerald.

Cooperating with the Auxiliary were also the Doctors' Wives' Club, whose luncheon at the Fontenelle immediately preceded the program. Mrs. Floyd Clarke, president of the Doctors' Wives' group, and Mrs. C. M. Wilhelmj, chairman of the luncheon, assisted at the tea.

Mrs. Frederick Schaefer, president of the Dental Auxiliary, Mrs. Charles Hennessey, president of the Pottawattamie Woman's Auxiliary, and Mrs. Aldis Johnson, president of the Council Bluffs Doctors' Wives' Club were presented to the group.

—The Bulletin.

* * * * * *

The Lancaster County Auxiliary has cooperated with the Red Cross by having a representative every day during the week of December 3 in one of the leading stores to sell tuberculosis stamps and give out information concerning them.

* * * * * *

The Auxiliary of the Hall-Merrick-Howard County Medical Society recently made plans to place Hygeia magazine in the city schools, also to make layettes for city charity cases. Three bed comforts, made at a previous meeting, were placed in needy homes. Plans were made for a class in first aid work.

* * * * * *

Coincident with a meeting of the Richardson County Medical society, Mrs. H. L. Miner, Falls City, treated the Auxiliary ladies to a turkey dinner.

—Mrs. J. C. Thompson, Publicity Committee.

THE SOCIETIES

The **Omaha-Douglas County Medical Society** had a regular meeting November 28, president Hamilton in the chair.

The scientific program consisted of a film demonstration in the manufacturing of insulin by Ely Lilly & Company.

This was followed by an address on "Amebic Dysentery" by Dr. Claude Mason. Dr. Mason presented a comprehensive discussion of the subject pointing out facts and fallacies current in the study of the disease. For instance, the term dysentery is a misnomer. It should be called amebiasis since many hosts to the amebae present no dysenteric symptoms. The problem of the carrier was fully discussed. Encysted forms proving a chronic condition was stressed. The oil of chenopodium in Dr. Mason's opinion, if cautiously, offers the best treatment of amebiasis.

The annual dinner of the society occurred at the Fontanelle hotel on the evening of December 12, with Dr. W. L. Bierring, Des Moines, President-elect of the American Medical Association, as guest speaker, his subject being "Historical Sequence in Medical Events."

The **Madison Six County Medical Society** held its annual meeting at Stanton, December 12, following a dinner. Forty-five physicians and their ladies were present. The program:

Dr. Roy W. Fouts, Omaha, "Treatment of Superficial Lesions, Benign and Malignant."

Dr. Fouts demonstrated his technique of electro-surgery in treating moles, warts, keratosis and the like.

Dr. J. A. Henske, Omaha, "Rheumatic Fever in Children."

Dr. Henske conceives rheumatism to be a streptococcic infection little influenced by medication. Rest in bed for long periods up to six months in cases of involvement of the heart, is absolutely necessary to a cure. An organized movement to make people "heart conscious" as we have been made tuberculosis conscious may accomplish much in the future.

Dr. John Calvert, Pierce, was elected president; Dr. C. A. Pierson, Beemer, vice president; Dr. R. A. Frary, Stanton, reelcted secretary-treasurer; Dr. A. C. Barry, Norfolk, delegate, for Madison county; Dr. John D. Ried for Stanton county; Dr. H. W. Francis for Cuming county; Dr. John Calvert for Pierce county; Dr. W. E. Wright for Knox county.

A regular meeting of the **Lancaster County Medical Society** was held December 5, following a dinner in honor of the guest speaker. Seventy-three members and visitors were present.

Dr. E. G. Zimmerer, president, presided.

According to an established custom in the society each president has the privilege, sometime during his term of office, to invite a guest speaker to address the society at one of its regular meetings.

Dr. Zimmerer invited as his guest, Dr. N. C. Gilbert of Chicago, who spoke on, "Angina Pectoris and Coronary Thrombosis."

Dr. Gilbert gave one of the most appreciated of addresses. He differentiated between angina pectoris and coronary thrombosis and called to our attention valuable points in diagnosis, pathology and treatment. His hearers could not help being impressed with the evident scientific knowledge possessed by the speaker, and by the vast amount of clinical and research data which he has at his command. Dr. Zimmerer is to be congratulated in his choice of a president's guest.

On motion a rising vote of thanks was given to Dr. Gilbert.

Physicians of the **Eighth Councilor District Medical Society** met in Bassett, November 16.

A 7 o'clock dinner was served at the Carpenter Cafe.

The principal point of discussion was a uniform fee bill.

Due to the necessity of complying with federal regulations requiring a uniform medical fee bill for county relief work this question brough out considerable discussion. The association finally adopted the Holt county plan as for this district.

There were thirteen in attendance.

The **Cedar, Dixon, Dakota, Thurston and Wayne Counties Medical Society** held its meeting at Laurel, December 7. The program follows:

"Treatment of Common Organic Neurological Syndromes," Dr. A. E. Bennett, Omaha.

"What Constitutes Adequate Prenatal and Postnatal Care," Dr. R. Crowder, Sioux City.

"Treatment of Common Skin Disorders in Clinical Practice," Dr. Frank, Sioux City.

"Case Report," Dr. F. G. Dewey, Coleridge.

The following officers were elected: Dr. G. E. Peters, Randolph, president; Dr. Walter Benthack, Wayne, vice president; Dr. J. C. Kildebeck, Emerson, secretary; Dr. John Buis, Pender, delegate.

Dr. Ruth Ashley Warner of Lincoln, Nebr., was the guest speaker of the **Hall-Merrick-Howard County Medical Society** which met on November 23, at the St. Francis Hospital, Grand Island.

Dr. Warner's paper was on the "Management of Occiput-Posterior Presentation With Special Reference to Prevention of Cerebral Hemorrhage." The doctor indicated by the different forms of management of these cases the time factor and the procedure in various types of posterior presentation conditions and indicated that the management of these cases is dependent upon multiple factors. She indicated that 90% of these postions become anterior posterior positions and that conservative treatment should be exercised for a limited time.

The program for the society meeting on October 26 consisted of a paper by Dr. Edmund G. Zimmerer of Lincoln, Nebraska, on "The Clinical Value of the Electrocardiograph." Another paper was presented by Dr. R. C. Woodruff of Grand Island, whose subject was "Diagnosis of Kidney Lesions With Special Reference to the Use of the Dyes."

A meeting of the **Saunders County Medical Association** was held at the City Hall in Wahoo, November 23. Dr. M. E. Lathrop presided over the meeting and introduced Dr. Einar Norberg as the principal speaker. Dr. Norberg, who returned recently from Africa where he had been in charge of a missionary hospital, had as his topic: "Practice of Medicine in Africa." There were 13 members present.

The **Fifth Councilor District Medical Society** held two meetings, one at Columbus, November 28, and the other at Fremont, December 5. Both meetings were well attended. Discussion of medical care for the indigent receiving federal unemployment relief was discussed at both meetings. At the Columbus meeting sentiment was favorable to organization of the state association with a view to getting some compensation for physicians attending such indigent, while at the Fremont meeting such a movement was opposed. Following programs were carried out:

Columbus:

"The Use and Value of Heavily Filtered X-ray," Dr. A. P. Overgaard, Omaha.

"Complications of Peptic Ulcer." Dr. Rodney Bliss, Omaha.

Fremont:

"Case Report of Intussusception," Dr. Geo. Haslam, Fremont.

"Streptococcus Infection of the Hip Joint," Dr. John Buis, Pender.

"Discussion of Medical Care for Recipients of Unemployment Relief," Dr. D. C. Block, Arlington.

At a medical society meeting of three counties held at the Kimball hospital, papers were given by Dr. Andrew Bunten of Cheyenne, "Thyroid Disease"; Dr. Arthur L. Miller, a dentist of Cheyenne, "Focal Infections", and Dr. A. L. Cooper of Scottsbluff, on "Sexual Neurosis." A lunch was served at the close of the meeting.

Two Omaha doctors, Dr. T. L. Houlton and Dr. A. E. Bennett, gave papers at the December meeting of the **Otoe County Medical Society,** December 11, at St. Mary's hospital, Nebraska City. Their general topic was head injuries.

Dr. Houlton told the doctors a mild or moderate brain injury was the hardest to treat. He said the patient should remain in bed and under observation for three days after any injury to the head, no matter how mild it seemed. Observation is more important than detailed examination, he said.

Shock usually accompanies injuries of this type, Dr. Houlton declared, and careful treatment for this condition is very important. Dr. Houlton's topic was "Head Injuries and Their Immediate Treatment."

Dr. Bennett, who gave a paper on "Post Traumatic Neurological Syndromes" illustrated his lecture with lantern slides. He showed x-rays of various cases he has had, explained symptoms and discussed treatment and results.

The **Lincoln County Medical Society** held its annual election of officers on December 14th, at North Platte.

All of the 1933 officers were reelected for the year 1934 as follows:

Dr. T. E. Dent, president; Dr. Joel Anderson, vice president; Dr. H. H. Walker, secretary and treasurer; Dr. O. R. Platt, delegate to state association.

After a thorough discussion of the medical problems entailed through the federal relief agencies it was decided to follow out the findings of the state association and the recommendations of its officers in order that a unified action might result.

HUMAN INTEREST TALES

Dr. D. A. Walker, Mullen, was reported ill last month.

Dr. Edward Furay, Omaha, suffered a cerebral embolism recently.

Dr. and Mrs. B. F. Richards, Crawford, spent Thanksgiving in Denver.

Dr. M. O. Arnold and family, St. Paul, motored to Iowa Falls, Iowa, to spend Thanksgiving.

Dr. J. S. Welch was reelected president of the Lincoln Recreation Board recently.

Dr. Floyd Clarke, Omaha, discussed child welfare before the P. E. O. society recently.

A small medicine bag was stolen from Dr. W. D. McGrath's car, Grand Island, recently.

Dr. F. J. Kotlar, West Point, has been elected president of the local Community club.

Dr. E. L. Bridges, Omaha, has become president of the Omaha-Midwest Clinical Society.

Dr. August Pohlman and Mrs. Helen Bridge Shartle, Omaha, were married November 21, 1933.

The "Story of Childbirth," Dr. Palmer Findley's recent book, is being republished in England.

Dr. Margaret Koenig, Waterloo, gave a talk at Elkhorn on "My Trip Abroad", last month.

Dr. Palmer Findley, Omaha, gave a talk on "Birth Control" before a local luncheon club, recently.

Dr. George B. Salter, Norfolk, spoke before the local Kiwanians on "American Medicine" recently.

Dr. and Mrs. W. A. DeMay, Fort Collins, Colorado, visited their son, Dr. G. A. DeMay at McCook, recently.

Dr. F. B. Young, Long Beach, Calif., former well known Gering physician, has been appointed police surgeon.

Dr. F. J. Rosenberg, retired veteran Lexington physician, has been ill for some time with neuritis and complications.

Dr. Googe of Jackson, Miss., who had been appointed to the position of health officer of Lincoln, has declined the position.

Dr. and Mrs. W. J. Hemphill, North Loup, spent Thanksgiving with their sons, Doctors Paul and George, at Pawhuska, Okla.

The November issue of Hospital Service contained an article by Dr. Victor E. Levine, Omaha, on "Making the World Safe for the Baby."

Dr. Olga Stastny, Omaha, spoke before the Waterloo Woman's club recently, on "Dolls of Many Nations," exhibiting about fifty dolls of as many nations.

The car belonging to Dr. F. A. Burnham, Arnold, was stolen from the streets of North Platte while he was attending the Western Nebraska Clinical Assembly early in November. It was recovered a few days later.

Dr. Tesla C. Nichola, a former Lincoln man and a graduate of Union College in 1919, is enroute to Adis Abeba, capital of Abyssinia, according to word received at Lincoln. There he is to be a member of the medical staff of the $250,000 Seventh-Day Adventist hospital and sanitarium, which institution was presented to the denomination by Emperor Hailie Selassie.

ROSTER OF OFFICERS—1933

Adolph Sachs, Omaha, President	1933
Joseph Bixby, Geneva, President-elect	1934
Homer Davis, Genoa, Vice President	1934
E. B. Hamel, Hastings, Vice President	1934
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1933
H. J. Lehnoff, Lincoln, Chairman	1933
W. R. Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
Lothar F. Egan, Chairman Medical Section	Hastings
E. G. Zimmerer	Lincoln
Frederick Langdon, Chairman Surgical Section	Omaha
W. J. Arrasmith	Grand Island

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
A E. Buchanon	Fremont
R. B. Adams, Ex-Officio	Lincoln

SUB-COMMITTEE

Joseph Bixby	Geneva
E. B. Hamel	Hastings
E. L. Brush	Norfolk

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

INSURANCE

C. A. Selby, Chairman	North Platte
R. D. Schrock	Omaha
Morris Nielsen	Blair

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
H. W. von Schulte	Omaha

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XIX Norfolk, Nebraska, February, 1934 No. 2

CONTENTS

Page

Diagnosis and Treatment of Renal Infection, J. C. Birdsall, M. D. 41

Symposium on Pneumonia—

Etiology of Pneumonia, Frank Conlin, M. D. 48

Unrecognized Pneumonia, J. P. Tollman, M. D. 53

Laboratory Aids in the Diagnosis and Treatment of Pneumonia, A. S. Rubnitz, M. D. 54

Serology of Pneumonia, W. B. Moody, M. D. 55

Surgical Complications of Pneumonia, Joseph Weinberg, M. D. 58

Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 60

The Medical Profession, B. F. Bailey, M. D. 63

Enuresis, W. O. Colburn, M. D. 67

After Care of Infantile Paralysis, Mary Potts, R. N. 69

EDITORIAL—

Page

Call for Papers 70

Annual Dues 70

Misunderstood 70

Federal Emergency Relief Funds for Nebraska Physicians 70

The Publication Board Changes Journal Policy 71

The Endemicity of Malaria in Nebraska 71

The Physician in the Court Room 72

Editorial Paragraphs 72

Higher Carbohydrate Diet Method in Diabetes Mellitus 74

Use of Digitalis Other Than in Treatment of Cardiac Decompensation 75

Obituary 75

Auxiliary News Notes 76

Tuberculosis Abstracts 76

The Societies 78

Human Interest Tales 78

Books Reviewed 79

Books Received 79

DIAGNOSIS AND TREATMENT OF RENAL INFECTION*

J. C. BIRDSALL, M. D.,
University of Pennsylvania,
Philadelphia.

A comprehensive understanding of the anatomical structure and the physiological function of the kidney reveals a most elaborate and complicated organ which is constantly engaged in the elimination of the waste products of the entire blood vascular system. It is, therefore, not surprising that an organ with such an important duty to perform is so frequently the site of bacterial invasion and disease. The routes by which bacteria reach the kidney in the case of its infection has been the subject of much discussion and controversy. In many cases the method is indeterminate, however, as a result of animal experimentation and clinical observation, we know that hematogenous, lymphogenous, and urogenous infections of the kidney occur and that infection by contiguity is extremely rare.

That bacteria may pass through the normal kidney has been shown both experimentally and clinically. Brown, Cunningham, Walsham, Fournier, Beaufume. and many others have repeatedly found the tubercle bacillus in the urine of patients with active pulmonary tuberculosis and the bacillus typhosus has been often recovered from the urine of typhoid fever patients without the presence of renal infection. Rosenow, Bumpus and Helmholz and Beeler have shown repeatedly in animal experimentation, that certain strains of colon bacilli and streptococci exhibit selective localization in the production of pyelonephritis.

Certain contributing factors are necessary in most cases for the production of renal infection.

---

*Delivered before the Omaha Mid-West Clinical Society, October-November, 1933.

A clinical history of a general systemic or focal infection, fall, blow or exposure to cold and obstructive interference with the normal outflow of urine in any part of its course, depicts the picture for an ideal invitation for bacterial invasion. Obstructive interference may be intrinsic or extrinsic in nature. The intrinsic causes are stone, tumor growths, stricture, prostatic enlargement, congenital valves, diverticulum and neurogenic, while the chief extrinsic causes are ureteral kinking due to movable kidney, aberrant vessels, congenital or acquired bands or adhesions, pressure of tumors, cysts, gravid uterus, and double ureters.

Many analyses have shown that the colon bacillus with its seventy-two different strains is the most frequently found organism in renal infection. Next in order of frequency are the staphylococcus aureus and albus. Various other micro organisms have been found, such as the streptococcus, organisms of the proteus group, typhoid bacillus, the tubercle bacillus, pneumococcus, and the gonococcus.

The incidence of renal infections according to age is extremely interesting. In Caulk's series of 2,100 cases collected from hospital and private practice, 1,191 occurred in adults and 909 in infants and children. In children the incidence of infection predominated in the female in the ratio of 3 to 1. In the adults there were 755 females to 436 males—a ratio of about 2 to 1, and in the latter period of life when lower urinary tract obstruction predominates in the form of prostatic enlargement, the ratio of male to female is more nearly the same.

In accordance with its location, clinical course and pathology, renal infection is classified as pyelitis, pyelonephritis, acute hematogenous suppurative nephritis, infected hydronephrosis, pyonephrosis, perinephritic abscess and tuberculosis.

Pyelitis or inflammation of the kidney pelvis is a pathologic entity. However, there has been much controversy over the nomenclature as improperly describing the whole picture inasmuch as there is an accompanying involvement of the renal parenchyma in many cases. The term, pyelonephritis, is based on pathological studies and has not been generally adopted as a clinical entity.

The term pyelonephritis signifies septic inflammation of the kidney secondary to pyelitis. It may be a descending or ascending form of renal suppuration and may be described as a more extensive and dangerous stage of pyelitis and an almost unavoidable complication of infected hydonephrosis and pyonephrosis. The descending form of renal infection is best known as acute hematogenous suppurative nephritis, or acute pyaemic kidney. Microscopically, in pyelonephritis, the straight tubules are dilated, distorted, and filled with epithelial debris, pus cells, urinary salts, and invading bacteria. The veins are also congested and distended with coagulated blood and pus cells. This is in marked contrast with the picture of acute hematogenous suppurative nephritis in which the blood clot and pus formation takes place within the arteries for the reason that they are terminal. In both cases, the organ may be converted into a mass of small abscesses.

Experimentally when the renal infection was allowed to exist for some time before the animals were killed, changes in the kidney due to urogenous and intravenous injection of bacteria, became indistinguishable. Experimentally it has also been shown and clinical observations have been made that renal infection takes place in the ascending and descending form in the absence of urinary obstruction. However, in many instances, urinary tract obstruction or stasis in one of its many forms is demonstrable and must be considered as an important etiological predisposing factor, and as such it must be properly dealt with in the management and treatment of renal disease.

The exciting and predisposing causes of pyelitis and pyelonephritis are practically the same as those of infected hydronephrosis and pyonephrosis. A careful history *will usually* reveal a sudden onset following an acute infectious disease, otitis media, infection of tooth, tonsil, sinus, lower urinary tract or furunculosis.

The patient in the presence of some form of urinary stasis or obstruction is seized with chills, fever, and pain in kidney area. In the case of the acute pyaemic kidney there may be elicited a history of septic endocarditis, severe acute infection, pneumonia, thrombo-phlebitis and carbuncle. The symptoms now are more typical of septicemia and in addition, all the symptoms of uraemia may be present.

Many writers have repeatedly reported series of cases of renal infection due to some form of urinary stasis or obstruction. Early in October of this year, I reported a series of one hundred cases of nephroptosis before the Pennsylvania State Medical Society. In this series there were 43 cases of renal infections including pyelitis, pyelonephritis, infected hydronephrosis and pyonephrosis.

In Mathe's series of ninety cases of nephroptosis there were fifty-six complicated by the more common renal infection. In both of these series, faulty drainage due to increased kidney mobility was undoubtedly the predisposing factor in bacterial invasion and its persistence. In both of Hunt's series of disposition of the ureter in the operative treatment of carcinoma of the bladder, the incidence of ascending pyelonephritis is very interesting and significant. In fifty-two cases, the ureter was disposed of by ligation, the tumor growth being then removed by segmental resection. There were seven post-operative deaths, a mortality rate of 13.4 per cent. The clinical causes of death were pulmonary embolus, pneumonia, and pyelonephritis. At autopsy pyelonephritis was found in all the cases. In forty-seven, the ureter was disposed of by reimplantation into the bladder at a new site, the tumor likewise being removed by resection. In this series there was an immediate mortality of 32 per cent. The clinical cause of death in each instance was ascending infection of the kidney and autopsy showed it to be extensive in eleven cases.

THE DIAGNOSIS OF RENAL INFECTIONS

In a consideration of the diagnosis of renal infection, it is necessary to include in the survey the following causes: the infectious diseases and focal infections, including furuncle and carbuncle; exposure to cold; drug irritation; venous congestion; including cardiac disease; pregnancy; movable kidney and abdominal tumor, perinephritic inflammation, calculus, tuberculosis, neoplasm and parasites, intestinal stasis and cystitis, especially when associated with obstruction as enlarged prostate gland or stricture. Frequently the accidental finding of pus in the urine, acute Neisserian infection being excluded, indicates the necessity of a thorough urologic study. If there is a cystitis the pertinent question of pyelitis should be considered. If pyelitis is present, is it unilateral or bilateral? If pyelitis is discovered, is the kidney parenchyma involved? The exact type of infection is to be studied. Is calculus present? Cystoscopy and ureteral catheterization are necessary to exclude cystitis and to determine unilateral or bilateral involvement. Functional kidney tests are requisite for the exclusion of pyelonephritis, infected hydronephrosis and pyonephrosis: X-ray study for the determination of calculus and cystography and intravenous urography or retrograde uretero pyelography in the recumbent and upright position for the revelation of vesical, ureteral, and renal pathologic conditions.

The finding of pus in the urine is the first cog in the wheel of diagnostic investigation, but it does not per se, in the absence of localizing symptoms, indicate the probable site of infection. The disregarding of a few pus cells in the urine is reprehensible. The education of the medical profession to the fact that the presence of pus in the urine, particularly in symptomless cases, represents very frequently upper urinary tract infection, has accomplished the result of bringing cases earlier for urologic study. The introduction of intravenous urography is epoch making if for nothing else than that it awakened the profession to the fact that the kidney could be visualized, that differentiation of renal disease from other abdominal organ disorders could be accomplished. Pediatricians are also becoming aware of the fact that the kidney of the child may show or be the seat of the same advanced renal pathological changes as the adult. It has been most aptly stated that pyonephrosis means medical procrastination and neglect. The watchful waiting policy for the occurrence of better localizing symptoms is to be highly condemned, particularly in this day of wonderfully developed cystoscopes, ureteral catheters, bougies, dilators, non-irritating opaque contrasting solutions, and the specially devised combined cystoscopic and pyelographic tables.

The treatment of renal infection constitutes a most comprehensive study of elimination, eradication and corrective measures. The principal features in the treatment of all renal infections are:

1. Regulation of mode of living and the diet.
2. Promotion of diuresis.
3. Correction of constipation.
4. Administration of urinary antiseptics and the transforming of the chemistry of the urine.
5. Eradication of focal infections.
6. The establishment of adequate drainage.
7. Correction of urinary obstructive interference.

In all acute renal infections the treatment may be outlined as follows:

1. Patient should be at rest preferably in bed.
2. Correction of constipation—changing of intestinal flora.
3. Administration of diuretics.
4. Administration of urinary antiseptic with alkaliniazation or acidification.
5. Removal of all foci of infection.
6. Drainage of renal pelvis, ureter, bladder and instillation or lavage with antiseptic preparation.
7. Surgical procedures.

In many patients the first five outlined procedures will not favorably influence or produce a cure and after a fair trial and the symptoms persist or become intensified, ureteral catheterization for the establishment of free drainage should be resorted to. In some cases the passing of a ureteral catheter and renal pelvis lavage with mild silver nitrate solution 1:5000 or a solution of Metaphen 1:1000 will be sufficient to clear up the infection. If an infected hydronephrosis is found the ureteral catheter may be left in place for three to five days. In the renal infection of pregnancy a 9 or 12 French ureteral catheter may be left in situ several days. Renal lavage may be performed daily. Severe unilateral pyelonephritis may require nephrotomy or even the induction of labor. If at operation a large localized renal abscess is encountered free incision and drainage may be sufficient. If the kidney is studded with small abscesses involving cortex and parenchyma, nephrectomy is the only choice.

Mathe and Campbell have presented a comprehensive outline for the treatment of chronic renal infection.

1. Correction of chronic constipation.
2. Clearing up of foci of infection.
    - a. Furuncles and carbuncles—incision and drainage.
    - b. Infected tonsils—tonsillectomy.
    - c. Infection of sinuses, mastoids—open, drainage.
    - d. Abscessed and pulpless teeth—extraction.
    - e. Osteomyelitis—surgical treatment.
    - f. Respiratory tract infection—medical treatment.
    - g. Prostatitis and seminal vesiculitis — massage, surgical drainage.
    - h. Infected genital organs in women—removal of infected tubes, and cauterization of cervical glands.
3. Correction of urinary stasis and obstruction.
    - A. Upper urinary tract.
        - 1. Ureteral stone—intra ureteral manipulation, ureterolithotomy.
        - 2. Ureteral stricture—progressive dilation.
        - 3. Increased mobility with kinking of ureter support with belt, binder or corset. nephropexy or ureteroplasty.
        - 4. Ureteral anomalies, ureteroplasty, heminephrectomy, ureteropyeloneostomy.
        - 5. Extra ureteral pressure:
            - (a) Aberrant renal vessel—surgical resection.
            - (b) Abdominal and pelvic tumors — adequate treatment.
            - (c) Gravid uterus — pelvic lavage at intervals, continuous ureteral drainage.
        - 6. Stones, tumors and abscesses in kidney itself—nephrolithotomy, nephrotomy, decapsulation, nephrectomy.
    - B. Lower urinary tract.
        - 1. Congenital valves of posterior urethra-surgical removal, electrocoagulation.
        - 2. Urethral stricture—dilatation, urethrotomy.
        - 3. Median bar vesical neck—punch operation contracted vesical outlet—transurethral prostatic resection open operation.
        - 4. Hypertrophied prostate— prostatectomy.
        - 5. Bladder stone—Litholapaxy, cystolithotomy.
        - 6. Bladder diverticulum—diverticulectomy.
        - 7. Acute gonorrhea — adequate treatment including the complications.
    - C. Neuromuscular disease—antiluetic therapy when due to syphilis, establishment of free drainage.
4. Drainage.
    - A. Diuresis.
    - B. Renal drainage and lavage per catheter.

Silver Nitrate Solution	0.5 to 4 per cent
Mercurochrome	1 to 2 per cent
Metaphen	1:5000 to 1:1000
Neo Silvol	10 to 20 per cent
Argyrol	10 to 25 per cent

        - 1. Renal lavage at intervals.
        - 2. Continuous drainage with retention catheter.
    - C. Daily irrigation of bladder to minimize re-infection of kidneys.
5. Medication.
    - A. Internal
        - Salol
        - Alkalinizing and acidifying urine
        - Methenamine
        - Methylene blue
        - Neutral acriflavine
        - Hexylresorcinol
        - Pyridium
        - Serenium
    - B. Intravenous
        - Methenamine
        - Mercurochrome with or without glucose
        - Neosalvarsan
        - Pregl's iodine
6. Vaccine Therapy
7. Surgical treatment
    - A. Surgical drainage and lavage through tube in most dependent portion of pelvis.
    - B. Decapsulation for perinephritis, pyelonephritis and concurrent abscess formation.
    - C. Nephrectomy.
        - 1. In cases with concurrent abscess of kidney.
        - 2. Hemorrhagic type of pyelonephritis.
    - D. Nephrectomy for:
        - 1. Diffuse pyelonephritis with destruction of kidney.
        - 2. Unilateral advanced stricture (ureteritis obliterans).
        - 3. Persistent uncontrollable hematuria.
        - 4. Where pyelonephritis has terminated in pyonephrosis.
        - 5. Calculus pyonephrosis.
    - E. Nephrectomy and drainage — blood transfusions and later when patient's condition if sufficiently improved, nephrectomy—for severe cases of pyonephrosis.

PERINEPHRITIC ABSCESS

The primary forms of perinephritic abscess may arise from traumatism and injuries to the lumbar region where there is penetration and laceration. Pyogenic microorganisms may be carried into the tissues and infection follow. The secondary perinephritic suppurations arise from many sources. The infection may extend from extra renal or renal foci.

Hunt, in a review of 106 cases, operated on at the Mayo Clinic between January 1, 1914 and January 1, 1924, found 47 cases secondary to primary renal disease; 19 secondary to pyonephrosis; twelve to lithiasis; 10 to tuberculosis; 5 to traumatic rupture of the kidney and 1 to infected hypernephroma. Exploratory operation revealed the perinephritic abscess to be in direct communication with a cortical abscess of the kidney in 26 cases. In 28 cases the kidney was not explored at operation but the promptness of the recovery of the patient after simple drainage and the absence of renal symptoms gave evidence that the source of the infection was a cortical abscess.

Habein in 1928 reported 44 cases of perinephritic abscess which were observed at the Mayo Clinic since 1924. In 23 of these cases there was a definite history of boils, carbuncles, abscess and tonsillitis. In the remaining 21 cases, there was no history of primary infection ascertained but Habein believes, however, that in 100 per cent of cases of perinephritic abscess when there is no evidence of primary renal disease, that there will be a history of such an infection preceding the onset of the abscess.

The characteristic symptoms of perinephritic abscess are pain, tenderness, tumor and fever. Chills, high temperatures and generalized aching pains may characterize the onset. The patient may feel below par, is easily fatigued, perspires freely, and has no inclination for any sort of activity. Urinalysis, bacteriologic examination, renal functional tests, pyelography and x-ray readily give evidence of primary renal lesions: pyonephrosis, renal lithiasis and tuberculosis which give rise to perinephritic abscess.

Miller emphasizes two points in the diagnosis, first, the existence of a fixed point of greatest tenderness over the fascial triangle of Grynfelt and Lesshaft or, as he calls it, the kidney triangle bounded by the erector spinae, the twelfth rib, and the internal oblique muscle; secondly, the exceptionally high leucocyte count. When this tenderness is not prominent it is well brought out by Murphy's fist percussion over the renal area of the back. J. R. Carty and E. Beer have recently called attention to two signs as given by x-ray. First, the spine is curved away from the affected side—this also occurs in other pathologic conditions of the kidney and is called "spasmodic scoliosis." Second, the outer margin of psoas is obscured by the abscess.

Hunt, in his series of 106 cases, had seven hospital deaths. Twelve patients died from one month to five years after operation, giving a total mortality rate of 17.9 per cent up to five years after operation.

TREATMENT

Early drainage is sufficient in most cases of perinephritic abscesses which develop from single cortical abscesses or are metastatic in origin. Primary nephrectomy or drainage and secondary nephrectomy may be necessary when the abscess is associated with pyonephrosis, renal tuberculosis and in those cases in which the kidney is the seat of multiple cortical abscesses. The condition of the patient is the deciding factor as to whether a primary or secondary nephrectomy should be performed. Blood transfusion should be considered when the hemoglobin is below 50%.

The most common organism is the staphylococcus aureas.

TUBERCULOSIS OF THE URINARY TRACT

Tuberculosis of the urinary tract in contradistinction to the genital tract is understood to include the kidney, ureter, bladder and urethra. Tuberculosis of the kidney is recognizable under the following seven anatomico-pathological types: Tuberculous nephritis; acute miliary tuberculosis; chronic miliary infiltrating tuberculosis; ulcerative tuberculous papillitis; tuberculous pyelitis; caseo-cavernous tuberculosis, and tuberculous pyonephrosis.

The most prominent, commonest, and in 90% of cases, the earliest symptom of tuberculosis of the kidney is irritability of the bladder—any patient complaining of frequency of urination, dysuria, pyuria, or hematuria, particularly by day and over a period of several weeks for no obvious reason should be suspected of renal tuberculosis.

The diagnosis of renal tuberculosis is by no means always an easy matter. The baccilli are incapable of demonstration in the urine, in about 15% of the cases even by persistent, repeated examination of twenty-four hour specimens of urine, employing faultless technique, and including guinea-pig inoculations, by the Bloch, intravenous, intraperitoneal or intrahepatic methods; even the culture methods often fail. The expert cystoscopist can diagnose tuberculosis of the kidney from the bladder revelations just as often as the laboratory bacteriologist.

The localization and degree of involvement are determined by radiography, chromocystoscopy, differential functional kidney tests, ureteral catheterization, pyelography and intravenous urography. The cystoscope is by far the most important instrument for both the localization of renal tuberculosis and in the majority of cases. for the actual diagnosis of the disease per se. Together with the functional kidney test—Indigocarmin by the method of chromoureteroscopy or chromocystoscopy the interpretations with respect to diagnosis in thousands of observations have been almost infallible.

The treatment of renal tuberculosis is both operative and palliative. Early nephrectomy with ureterectomy, removing the ureter down to or below the lowermost stricture if any be present, through the usual lumbar incision or a second lower incision, is the procedure of choice in all cases of unilateral renal tuberculosis. The discomfort from persistent cystitis may be lessened and the recovery from the tuberculous process in the bladder is greatly promoted by tuberculin judiciously used. methylene blue, intravesical injections of carbolic acid 30 c.c. of a 6 per cent solution every four to six days after the method of Rovsing. In some cases of granulomatous formation, cystoscopic fulguration has been useful.

Of paramount importance in all cases of tuberculosis, is the consideration of the best hygienic and dietetic conditions attainable. Transference of the patient to a high dry atmosphere is ideal although usually impossible. No surgeon has performed his full duty when he simply removes the kidney and permits the patient to return to his former life, habits and environment.

Palliation, with or without the use of tuberculin, has a definite place in the treatment of urinary tuberculosis and should be reserved for postoperative treatment and for the bilateral, inoperable cases. Wildbolz, in a review of over 1000 cases of renal tuberculosis, including 660 nephrectomized patients, claims an operative mortality of 2.2 to 2.5 per cent and complete cure over a period of 10 to 25 years in 59%. Braasch, reporting the statistics of the Mayo Clinic, finds an operative mortality of only 1.3 per cent in 516 nephrectomies for tuberculosis and a complete cure in 60 per cent of patients. Contrasted with these results, palliative or medical treatment for renal tuberculosis offers little or nothing. Wildbolz analyzed 316 cases of tuberculosis of the kidney, treated non-operatively, with and without tuberculin, under the best climatic and heliotherapeutic conditions in Switzerland, and found that 70 per cent died within two years, and only 10 per cent lived longer than five years after the onset of symptoms, and the few survivors after apparent cure, all had a relapse sooner or later and died.

Case report, case illustrative of ascending pyelonephritis.

J. R. G., age 60, admitted to hospital May 11, 1933, and successfully undewent operation — suprapubic prostatectomy. May 16, 1933. Convalescence was uneventful and was to be discharged. June 25, 1933. Following bladder irrigation by urologic resident on this date by pressure syringe, an unusual procedure as our technique calls for the gravity method, patient developed dull pain in region of right kidney, chill and rise in temperature to 102 degrees. On June 26, 1933, urinalysis was cloudy, alkaline, specific gravity 1.006, trace of albumin, no sugar, occasional leucocyte, many motile bacteria, triple phosphates. Vomited after morning meal and immediately had a chill. Temperature rose to 106 degrees. White blood cell count 28,000. Dull pain in region of right kidney. Tenderness marked on bimanual palpation.

June 27, 1933: Urine: Acid, specific gravity 1.005, trace of albumin, microscopical examination showed clumps of pus cells; no motile bacteria. Had a chill at 10:00 a. m., temperature 105 degrees. Blood culture taken. Small blood transfusion, 50 c.c. given.

June 28, 1933: Developed chill at 11:00 a. m. Temperature 106.5 degrees, dull pain in region of right kidney and tenderness elicited on palpation, but kidney was not palpable. White blood count—26,200. Under nitrous oxide anesthesia the right kidney was exposed and found to be twice the size of a normal kidney; pelvis was not distended. Whole kidney was congested and capsule tense. Incision was made into kidney and middle calyx opened, evacuating about a fluid ounce of cloudy urine. Size of kidney was immediately diminished about a third; no obstruction noted at uretero pelvic junction, or calculus palpated. Drainage tube placed in renal pelvis and a second tube outside of kidney. Incision closed. Small blood transfusion, 50 c.c.

June 29, 1933: Condition satisfactory; stomach retentive. White blood cell count 16,200.

June 30, 1933: Small blood transfusion, 50 c.c., given on this date and also on July 1, 1933. Blood culture showed streptococci in pure culture; also culture of cloudy urine removed from kidney at operation showed streptococci in pure culture.

Patient discharged from hospital August 18, 1933; incision healed; temperature normal. Urinalysis: slightly cloudy, acid, specific gravity 1.010, trace of albumin, no sugar; microscopically—many pus cells.

After being home three weeks kidney incision broke down and urine drained copiously from kidney fistula.

Patient admitted to Presbyterian hospital in October for study. X-ray negative for calculus. Cystoscopy: Bladder normal. Indigocarmin intravenously appeared from left kidney in three and one-half minutes—deep blue—no appearance from right kidney in twenty-five minutes. Indigocarmin appeared from right kidney fistula in five minutes. Ureteral exploration met obstruction 1 c.m. from R.U.O. Intravenous urography showed that there was extensive clubbing of calyces of right kidney, also large pelvis capacity. Nephrectomy of right kidney performed October 25.

Case report: Reverend C. A. C., age 67.

Admitted to the Presbyterian hospital October 10, 1932, with chief complaint of acute retention. Patient was studied and diagnosis of prostatic hypertrophy made. After careful check up of blood chemistry, kidney function, heart and lung examination, prostate was removed on September 7, 1932.

His temperature which had previous to operation been normal, on evening after operation, September 8, 1932, rose to 100 and the following day had a chill. Also on September 10, 1932, had a chill when temperature went to 107 1/5 and he succumbed.

Blood culture was sterile.

Culture of kidneys showed B. Coli.

Autopsy showed cause of death was uremia, pyelonephritis-bilateral, both kidneys showed diffuse miliary abscesses throughout.

Diagnosis: Diffuse pyelonephritis, ascending.

Case report: Patient G. M. H., age 66.

Admitted to the Presbyterian hospital October 10, 1932, with a diagnosis of renal calculus, left. History of present illness stated he first noticed pain in the region of the bladder November 4, 1931, which was dull and aching in character and did not radiate. There has been pyuria present for several months, nocturia two or three times during past month, frequency during day every two hours for past three months.

Diagnosis of cystitis was made.

Cystoscopic study, however, showed both the right and left kidney to be functioning in 5½ and 5 minutes respectively. The voided specimen of urine was loaded with pus cells. Urine from the left kidney showed many pus cells and culture showed micrococcus albus.

X-ray showed a shadow of two stones in the middle third of kidney shadow. Uro-selectan intravenously shows these shadows to be left kidney shadows; one in the lower calyx and the other in the region of the renal pelvis.

Pyelolithotomy performed October 19, 1932. An aberrant vessel was found at operation to wind around uretero-pelvic junction and into lower pole of kidney. Compression of this vessel did not seem to produce any blanching of the kidney parenchyma and it was severed between two ligatures. Both calculi were removed through an incision in the renal pelvis. Drainage tube was placed into opening in pelvis.

With the development of bilateral epididymitis, temperature became elevated and was septic in character, ranging from 99 to 102. Developed chill on the eighteenth post operative day and also had chills daily until the twenty-first post-operative day when the patient expired.

Two days before death bilateral orchidectomy was performed and specimens showed acute suppurating epididymo-orchitis with areas of necrosis.

Blood culture was repeatedly negative.

Autopsy showed pyelonephritis. The lower third of kidney showed diffuse miliary abscesses in area supplied by severed vessel.

Diagnosis: Ascending pyelonephritis with necrosis due to severance of vessel supplying lower pole of kidney.

Blood culture at autopsy was sterile.

Culture at autopsy of kidney showed B. Coli.

Case report: Crossed ectopia of left kidney with fusion to right, calculus—pyonephrotic kidney.

Patient—W. D., age 58. Admitted December 27, 1932. Service of Dr. John Speese.

Diagnosis: Carbuncle of the neck.

Carbuncle was excised December 28, 1932, by Dr. Speese—radio knife used; wound was packed with Dichloramine—T 3%.

Urinalysis on admission was acid, specific gravity 1.101, sediment clear, dense cloud of albumin, no sugar, 1 - 2 leucocytes, few hyaline and light granular casts. January 1, 1933—Urinalysis—acid, specific gravity 1.010, clear, no albumin, no sugar, no leucocytes and a few epithelial cells.

Blood sugar on December 28, 1932, was 103; plasma CO^{2}57. Kahn — Negative. Wasserman — Negative. Blood pressure on admission 178/100.

Patient had some slight exacerbation of temperature until January 26, 1933, when it seemed to become somewhat elevated, reaching as high as 101 and 102.

Urinalysis were practically the same until February 20, 1933, when the urine became loaded with pus cells.

On February 20, 1933, he had severe pain in the right lumbar region and I was asked to see patient on February 22, 1933. At this time bimanual palpation of kidneys shows a fullness over the right kidney area; also, there was slight tenderness elicited over right costo-erector spinal angle which is very significant of perinphritic abscess. I advised at that time cystoscopy, ureteral catheterization, chromoureteroscopy and pyelography. This examination was carried out on March 1st, cystoscopic examination was done. Urine from the bladder showed sediment which was 50% pus, there was a constant stream of pus pouring from the right ureteral orifice. Indigocarmin, intravenously, appeared from the left side in thirteen minutes and no dye from the right in twenty-five minutes. 50 c.c. of a 12½% solution of sodium-iodide was injected in right kidney without causing any pain; pyelogram of left kidney was not done.

Culture of the urine from the right kidney showed staphylococcus aureus. Microscopic examination showed each smear to be loaded with pus cells. Culture of the urine from left kidney showed staphylococcus aureus with an occasional leucocyte and 6 to 8 R.B.C.

On February 20, 1933, R.B.C. was 3,250,000; leucocytes 13,180; hemoglobin 65%; polys 75; large lymph 21, eosinophiles 1. February 21, 1933, blood urea nitrogen was 16; blood sugar 100; CO^{2}50.

Urine from the twentieth of February continued to be loaded with pus cells.

Pyelogram showed that both ureters go over to the right; right kidney pelvis is completely disrupted and shows very large multilocular sac. Left side was not injected.

Patient was transferred to the Patton Ward and on March 8, 1933, under Avertin Anesthesia, incision was made over right kidney area, the kidney was found to be greatly distended, marked pyonephrosis extending from the diaphragm down to below the crest of the ileum. No perinephritic abscess found. Opening made into pyonephrotic sac and about a pint and a half of thick, yellow greenish pus was evacuated. Left kidney was fused to right pyonephrotic sac.

Patient's temperature which had been running around 102, now dropped to 98 and was subnormal for three or four days when on March 13, 1933, it took a sudden rise to 101.4. At this time he developed parotitis of the left parotid gland.

Dr. Speese saw patient in consultation and x-ray treatment was given. On March 14, 1933, Dr. Aiguier saw patient in consultation and his report is as follows: "There is evidence of pus exuding from Stensen's duct on the left side. Report of blood culture—Staphylococcus aures.

Patient died on March 16, 1933.

Diagnosis:

1. Crossed ectopia of left kidney with fusion to right calculus pyonephrotic kidney.
2. Calculus pyonephrosis.
3. Septicemia.
4. Parotitis, left.
5. Unhealed carbuncle of neck.

The most recent statistics as to the frequency of crossed ectopia are those of Stewart and Lodge who found 1 in 6,500 autopsies. Pagel was only able to find 55 genuine cases up to 1923.

Symposium on Pneumonia

ETIOLOGY OF PNEUMONIA*

FRANK CONLIN, M. D.,
From the University of Nebraska College of Medicine,
Omaha, Nebraska

We feel in the present day that we know a great deal about pneumonia but a review of the history of this disease adds to our interest and tends to make us humble for Hippocrates, 370 years B. C., accurately described the clinical symptoms and Areatus, 200 years A. D., gave a clear cut description of the disease which might serve as a model for the text books of today. Valsalva and his pupil, Morgagni, in 1704, differentiated between pleurisy and pneumonia and in 1819 Laennec, the father of physical diagnosis, gave the first accurate description of the morbid anatomy of this disease. Louis Pasteur, in 1881, described an organism that he had isolated from the sputum of a case he called "sputum septicemia" and Sternberg, later Surgeon General of the United States Army, isolated and described a similar organism that same year. It was not, however, until 1884 that Fraenkel showed that this organism was the most frequent cause of pneumonia and the name of "pneumococcus of Fraenkel" was given to it. In 1910, Neufeld, working with specific agglutinating sera, was able to separate the pneumococci into various groups which he called Groups I, II, III, IV. This work was later confirmed by Lister(10), working in South Africa, and Dochez and Gillespie, working in the Rockefeller Institute in New York. Cooper(2), in 1929, further isolated from Group IV, new types designated V to XIII and in 1932 continued this study describing further types XIV to XXI. Bacteriologists today believe that there are probably from thirty to fifty types but that only seven or eight are prevalent and twenty slightly prevalent.

INCIDENCE

Pneumonia outranks all diseases except tuberculosis as a cause of death in the registration areas. It is seventh among principal causes and second, if we consider only adult deaths(9). Two per cent of the hospital admissions in the United States are due to pneumonia but inasmuch as children are not sent to hospitals as frequently as adults, these figures are probably far from accurate. Norris and Farley(3) have shown that there is a definite increase throughout the world and contend that this increase may possibly be due to the increased use of alcohol, overcrowding, increased facilities for travel, and less time spent outdoors. Cole(4), however, doubts this statement and statistically attempts to prove it is decreasing. He shows definitely that from 1901 to 1918 there had been a decrease in mortality rate from 124.5 per 100 thousand to 83.3 per 100 thousand. Dublin, statistician of the Metropolitan Life Insurance Company, shows that the mortality rate from 1911 to 1920 remained fairly constant except in 1918 during the influenza epidemic when it almost doubled. Since 1918 there has been a distinct and significant drop. However, it must be concluded by anyone making a study of this subject that the mortality and morbidity will vary greatly in different countries and at different times in the same country depending upon a variety of circumstances, the foremost, of which, are the susceptibility of individuals and the virulence of the organism.

The Metropolitan Life Insurance Company from 1911 to 1916 had a death rate from pneumonia of 107 per 100 thousand of those exposed and states that it kills more than measles, scarlet fever, diphtheria, whooping cough, and poliomyelitis combined. The variability of the mortality and morbidity rate in different years is well shown by figures taken from the death rate in Nebraska for 1924 to 1930 and also figures taken from the University of Nebraska Hospital.

STATE

Date	Number of Deaths	Rate per 100 Thousand
1934	1079	86.8
1925	1042	95.7
1926	1085	94.7
1927	769	61.4
1928	1061	96.1
1929	857	64.
1930	929	69.9

UNIVERSITY OF NEBRASKA

Date	Ratio	Cases	Lobar Pneumonia	Deaths	Percent'ge
1923	1- 60	2687	44	4	9%
1924	1-140	2807	20	2	10%
1925	1- 91	3035	33	10	30%
1926	1- 78	2903	27	21	56%
1927	1-445	2589	6	4	66%
1928	1-144	2891	20	7	35%
1929	1- 71	3342	47	10	21%
1930	1- 93	3180	34	6	25%
1931	1-231	3467	15	5	33%
1932	1-128	4376	34	7	21%

From the above, one may conclude that for the last ten years, 1 out of every 146 cases admitted to the University Hospital has been a lobar pneumonia with an average mortality rate of 29.6%.

---

*Read before Omaha-Douglas County Medical Society, Nov. 14, 1933.

Cole, Baldwin, and Larsen(5), in a bacteriological study of 2,000 cases of lobar pneumonia, found that pneumococcus was present in 95.6% of the cases; hemolytic streptococcus in 3.8%; Friedlander's bacillus in 0.4%; influenza in 0.05%; and staphylococcus aureus in 0.1%. The pneumococcus is found in the mouths of 80 to 90% of healthy individuals and although the virulence of the organism found in healthy mouths is low, still they are true carriers. One out of every four in this assembly, for example, has Type III in the nasopharynx(6).

The virulence of the organism increases with its passage through various members of a family so the strongest member is often the last one to be taken with the disease and when he does take it, takes it in its most virulent form. The organism is easily killed by exposure to sunlight in 1½ hours.

Dochez and Gillespie(8) separated 74 cases of lobar pneumonia by methods of agglutination and specific protection in animals and found that Group I comprised 47%; Group II, 18%; Group III, 13%; and Group IV, 22%. The mortality varied very definitely with the type, Type II having the highest mortality rate, 61%; Type IV, the lowest rate, 7%; Type I has a mortality rate of 24%; and Type III of 60%. Young people are more prone to infection from Type I, elderly people to Type III while Types II and IV show no age predilection(6). Young people with Type III are likely not to succumb. Men are more prone to infection with Type I and II and women to Type III and IV. Mixed infections vary in nature from year to year, the highest occur when influenza is prevalent. Types vary from year to year. In 1920 and 1921, Type I was prevalent in 45.2%; in 1922 and 1923, Type I was prevalent in only 21%. Those cases of pneumonia, Type I, show the lowest percentage of mixed infection, 18.4%; the highest percentage of mixed infections occur in Type IV, 31.2%. Type III is prone to show pre-existing disease, 63.3% of the cases giving this history. Different types predominating in different communities is explained on the basis of contact infection.

Positive blood cultures occur most frequently in the more severe, Types II and III, particularly II which show positive blood cultures in 39.7% of the cases. From the standpoint of prognosis this is an important point for the mortality rate in those with a positive blood culture is 83% as compared with a rate of 18.7% in those with sterile blood. Clinically there is no striking difference in the clinical course of various grades. In all four types, the death rate is definitely related to the lobes involved. In single lobe involvement, the mortality rate was 20.9%; in two lobes, 36.3%; in three lobes, 40.8%; and in four lobes, 65.5%.

Age and resistance of the individual are the most important factors in determining the death rate, each decade showing a steady increase. Type III carries with it the highest rate because of its prevalence in older individuals with low grade resistance. However, complications are more frequent in Type I than in the other types. Cecil, in analyzing 100 cases found complications in 12% of his Type I cases and this figure is twice as high as any of the other types.

METHODS OF INFECTION

The two methods of infection are:

Hematogenous, by penetration of the blood and lymph vessels of the upper respiratory tract and then a localization in the lung. This is the generally accepted theory as to the pathogenesis of the disease.

Aerogenous, or inhalation theory is not widely credited. While pneumococci are present in 80% of the mouths, these pneumococci are readily distinguishable from the higher parasitic pneumococci that are responsible for severe pneumonias. In other words, the infection is not autogenic in nature but derived from some extraneous source. The high percentage of positive cultures taken from the mouths of contacts and convalescents, who carry the organism for a long time, explains the spread of the disease, infection in an individual being the result of contact with a case or carrier by a susceptible host.

I should like, at this time, to emphasize, therefore, the importance of isolation of pneumonia cases, the care of the sputum, and the importance of wearing masks by nurses and other attendants in the sick room.

PHASES OF INFECTION

There are three phases of infection of the individual by the pneumococcus.

First, the period of circulation and onset, depending upon the general and local resistance of the individual. By local is meant catarrh of the upper respiratory passages. The severity of the disease will depend upon this resistance plus the virulence of the organism for virulence varies from year to year and increases in virulence with each passage through humans. This is evidenced by the high morbidity and mortality rate in pneumonia outbreaks in prisons, barracks, and religious institutions.

The second phase of infection are the clinical manifestations due almost entirely to the toxemia and disturbances, particularly, of respiratory and circulatory functions. It is a well known clinical fact that the degree of toxemia does not necessarily bear a relation to local disturbances for all of us have seen patients with high temperatures, rapid pulse, cyanotic, rapid and labored respiration, and dilirium, with only slight involvement of an apex and in contrast, massive pneumonia involving one whole lung, with comparatively slight evidences of toxemia, are encountered. There is much speculation on the nature of the toxin. Clinically, we know that symptoms are not due to absorption of exudate secondary to the invasion of the pneumococcus for these symptoms subside rapidly at the crisis but physical findings remain. It is now thought to be a hemolytic endo-toxin which exists pre-formed in bacterial cell.

The third phase of the infection, or the crisis, is hard to explain. 49.6% of all cases are terminated by crisis. Cecil and Larson(5), in a study of 2,000 cases found that in Type I, 56.6% were terminated by crisis; Type II, 50%; Type III, 39.5%, and Type IV, 45.5%. Immune bodies are not found in the circulation until several days after the crisis and this would seem to contradict the theory that the crisis was due to neutralization of toxins. "The discrepancy between the small amount and the inconstant presence of protective bodies in the blood and the decisive nature of the crisis, occasional recovery at the usual time, in spite of the early appearance of protective bodies, the ineffectiveness of the serum, after the third day, suggest that other factors may be concerned in the defensive mechanism." Lord(7).

GEOGRAPHICAL

Pneumonia is found in all latitudes and every climate. In the hot climates, it is found particularly where elevation causes marked changes in temperature from hot days to cold nights. Mortality, however, is not affected by latitude for in the United States the mortality in New York is greatest, while in Michigan it is the least and they are in the same parallel.

RAINFALL

During dry years there is a notable increase in the prevalence of pneumonia. The older doctors speak of pneumonia years and Well(11), in an exhaustive review of the literature of pneumonia, shows there has been 222 distinct epidemics of pneumonia from 1440 to 1888. During our time, there have been the epidemics in the Panama Canal during construction of the Canal and in the Rand Mines in South Africa. Epidemics reported from prison barracks and monasteries are examples and any physician with experience has seen evidence of family and house epidemics.

COLD

Authorities vary with regard to their attitude to cold as an etiological factor and it is shown frequently that pneumonia is not prevalent in the antarctic regions until it is brought from without. Cold causes a retention of waste products of metabolism, a variation in blood pressure, slowing of the blood stream, and impairment of cellular metabolism. These factors plus lowered resistance of the host and increased virulence of the organism account for the infection. Norris and Farley, in a study of 4,244 cases found 17.29% gave a definite history of cold and exposure.

SEASON

Most pneumonia cases are seen during the winter months particularly in December, January, February, and March, months in which sudden changes of temperature cause irritation of mucous membrane of the throat, larynx and upper respiratory tract, thereby lowering resistance. Dry air in houses, less time spent outdoors, more over-crowding during winter are probably other factors explaining this incidence. Interestingly, however, the peak of the wave of respiratory catarrh, as manifested by bronchitis, does not coincide with the pneumonia curve and pleurisy is distributed throughout the whole year.

TRAUMATISM

Trauma plays a minor role, according to Jorgenson, 0.13% of cases give this history. However, in a review of the literature, he says it is a factor in from 1 to 4% but in a careful analysis of 770 cases at the Rockefeller Institute Hospital, was not able to find a single instance in which trauma played an important etiological role.

IMMERSION IN WATER

7.9% of Norris' series gave this history.

INHALATION

Pneumonia following inhalation or aspiration is usually lobular in type. The inhalation of dust, fumes, or gas, acids or ether, or the aspiration of vomitus while patient is unconscious, the aspiration of blood, pus, foreign bodies, or irritating fluids, are among the causes.

OCCUPATION—SOCIAL CONDITIONS

The outdoor dweller of the country is less susceptible to pneumonia than his city cousin. This is well shown in the morbidity rate among sailors as compared to soldiers living in barracks. 64% of Cole, Baldwin, and Larsen's cases were engaged in outdoor activities.

HYGIENE

Personal hygiene and over-crowding are more important in the discussion of etiological factors than are occupation or climate. It is interesting to note that among common soldiers pneumonia is more prevalent than among the officers, living under the same surroundings.

PREVIOUS ATTACKS

No disease with which the physician comes in contact shows a higher percentage of recurrences than does pneumonia. One attack predisposes an individual to another. Rush reported one case giving a history of 22 different attacks and Fraenkel reports 19.56% of his cases giving a history of a previous attack.

PREDISPOSING DISEASES

Diabetes, nephritis, arteriosclerosis. and insanity are definite pre-disposing factors. Cole, Baldwin, and Larsen found these diseases pre-disposing 32.6% of their cases.

Acute diseases of the upper respiratory tract are common pre-disposing causes. 46.7% of Cecil's 1000 cases gave this history. Influenza usually causes lobular type of pneumonia but may also cause lobar. A history of typhoid fever was found in 1.2% of this series and measles was a common antecedent of the disease.

ALCOHOL

According to Osler, alcohol is a most important factor and Cole found an alcoholic history in 18.9% of his 537 cases. Exposure resulting from alcoholism must be taken into consideration when arriving at this figure, however.

AGE

All ages are susceptible to pneumonia and both extremes of life are particularly so. Half of the cases of pneumonia occur between the ages of twenty and forty. Although we ordinarly do not think of pneumonia in infants as being really lobar, since the more frequent use of x-ray, it has been proved that many so-called cases of bronchial pneumonia in infants are really lobar. Jorgenson has shown that three-fifths of all cases between the ages of one and fourteen years are definite lobar pneumonias.

SEX

Women suffer less frequently from the disease than do men owing probably to less exposure and other factors already mentioned. Of 1,867 cases studied by Cole, Baldwin, and Larsen, 83.1% were men and 16.9% were women. The U. S. Census report on deaths from pneumonia reports 55% are males; 45%, females.

FACE

There is a definite racial susceptibility to the disease and a definite variation in resistance. Indians and Negroes are particularly prone to the development of the disease and show very poor resistance. The Irish and Italian stock are also very susceptible.

TREATMENT OF PNEUMONIA

Pneumonia is a self-limited disease but no disease requires more intelligent nursing and conscientious medical care. The main objects in treatment are: (1) To conserve strength and energy, (2) relieve symptoms as they arise, and not to over-treat, (3) neutralize by known measures the effects of the disease upon circulation and, respiration, and (4) to aim to destroy specific agents by means of specific measures (serum).

REST

The first cardinal principle is rest and both mental and physical rest are required. To obtain this, it may frequently be necessary to use the various drugs, such as morphine. to relieve pain and restlessness.

FRESH AIR

There has been a reaction to the fresh air advocates of ten to fifteen years ago who exposed their patients unduly. A well ventilated room will provide sufficient oxygen in the average case. There is no need to overwork the patient by covering him with hot water bags and blankets nor to endanger the life of the nurse by keeping the patient on an open porch in midwinter. Common sense is the answer. There is no need for such radical procedure in the light of our present knowledge.

DIET

At rest, the normal individual requires 26 calories per kilo. A patient with an infection requires 40 calories per kilo or account of an elevation of total metabolism. In other words, we should attempt, in the average pneumonia patient. to provide 2800 to 3000 calories per day. This may be given in easily digested, high carbohydrate foods. In the very toxic cases, pure glucose, on account of the fact it is utilized quickly, may be given in 25% solution, intravenously, two to four times a day in amounts from 200 to 400 c.c. By so doing, we combat dehydration, spare protein, and lessen intoxication. The same amount may be given by mouth in lemonade. Undoubtedly this method of treatment, based as it is on sound, physiological principles, has saved many so-called hopeless cases.

CARDIO-VASCULAR STIMULATION

It was formerly a routine treatment to stimulate the heart in all pneumonia cases for it was thought that the toxin particularly affected the cardio-vascular mechanism. Porter and Newberg showed conclusively that the danger in pneumonia was vaso-motor failure or damage to the respiratory mechanism. Now, possibly, the pendulum has swung too far the other way and authorities are still at variance with regard to the use of cardiac stimulants. Cohn and Jamieson(14) of Boston, for example, use massive doses of digitalis while Sir James MacKenzie and Hall of New York are entirely opposed to its use. In the three medical divisions of the Bellvue hospital during 1928 and 1929, digitalis was used upon every second case and it was found in the 238 in which digitalis was used, there was a mortality rate of 41.4% while in 404 cases that were not digitalized, the mortality rate was 33.7%(12). In other words, for every 100 controlled deaths, there were 122 in the digitalis group. It might be concluded that most authorities at present believe digitalis should only be used when heart disease co-exists or when auricular fibrillation, or other evidence of mycardial damage, makes themselves evident.

OXYGEN

Almost every large hospital is equipped with oxygen tents at the present time. By the use of oxygen, there is marked lessening of cyanosis, slowing of the pulse with improvement of quality, slowing of the respiration rate, decreased restlessness and delirium, and marked subjective improvement. In using oxygen we should attempt first, to begin treatment before irreparable damage has taken place, second, to get as much air into the alveoli as possible, and third, to continue administration until unfavorable signs disappear. Two liters of oxygen per minute through a nasal catheter will provide 30% oxygen and five liters per minute, 38%. However, with an oxygen tent we may provide 40% to 50% oxygen and give our patient greater comfort. We may conclude, that, inasmuch as pneumonia is a self limited disease, the use of oxygen, as a supportive measure, may carry our patient further along toward crisis. By its use we may prolong his life until immunity is established.

SERUM

This will be discussed in more detail by the other essayists but we may quote Cecil and Plummer who, with the use of Felton's(15) concentrated serum, which has been used since 1924 on Type I, reduced the mortality rate from 31.2% to 20.1% and on those cases that were seen earily to a mortality rate of 11.7%. Type II has shown slight reduction in mortality rate but we may conclude that with the greater use of the serum we may hope to reduce the mortality rate in Type I close to 50%.

CONCLUSIONS

There is a very definite trend in medicine today to restore to their original important positions, the influence of heredity, constitution, and environment as etiological and prognostic factors in the consideration of any disease. We have attempted to show their importance in pneumonia and also have stressed the importance of an early bacteriological study.

From 1920 to 1929 there were one million deaths from pneumonia. We have no known method for immunization against this disease as we have in diphtheria. Our only hope for lowering this high mortality rate is to educate both the profession and the public to early recognition, prompt etiological diagnosis, and treatment.

BIBLIOGRAPHY

1. Oxford Monographs X: 405.

2. Cooper—Journal Experimental Medicine — 49: 1929.

3. Norris and Farley—Osler Modern Medicine—1: 184—1925.

4. Cole, Nelson—Loose Leaf Medicine—1: 203—1920.

5. Cole, Baldwin and Larsen—Archives Internal Medicine—40: 1927.

6. Sutliff—Journal American Medical Association —101: 17.

7. Lord—New England Medical Journal—205: 1931.

8. Dochez and Gillespie—Journal American Medical Association—61: 727—1913.

9. Heffron and Varley—American Journal Public Health—22: 1932.

10. Lister—South African Institute Medical Research. 1913.

11. Wells—Medical News—86: 930—1905.

12. Niles and Wychoff—American Journal Medical Sciences—180: 348—1930.

13. Stone—American Journal Medical Sciences—163: 659—1922.

14. Cohn and Jamieson—American Journal Medical Sciences—180: 348—1930.

15. Felton—Boston Medicine and Surgery—190: 819—1924.

UNRECOGNIZED PNEUMONIA*

J. P. TOLLMAN, M. D.,
Omaha, Nebraska

For convenience in discussion, the pneumonias may be divided into three groups. The most common, as we see them, is the broncho, or lobular pneumonia. As the name indicates, it is characterized by scattered lesions through the lung. These begin as very small foci, only 1 to 2 mm. in diameter. They may be few or very numerous. As the disease progresses they become larger, and in severe cases may become confluent. In the early stages when the lesions are small and scattered, the patient may show evidence of severe illness, and yet, because of the isolated foci there may be few if any physical signs. Consolidation is not yet nearly enough complete to give dullness to percussion, or characteristic changes in breath and voice sounds. There may be only a few scattered fine rales which are easily overlooked. As the disease progresses, however, patchy consolidation may be evident as the lesions enlarge and become confluent. Auscultatory signs progress similarly. Repeated examination of the chest is therefore indicated, and necessary for a true diagnosis and evaluation of the condition. X-ray examination will show this progression of the disease, but repeated examinations present obvious difficulties in many cases.

The age incidence is of really no help in ruling out the possibility of bronchopneumonia. We have seen it as early as the second day of life, and it may occur at any age.

One group of cases is especially liable to misdiagnosis in regard to pneumonia. They are the people who are hard to examine, by reason of obesity, or unsatisfactory surroundings. The clinician often hesitates to re-examine these people if the first examination has shown no lesion.

We have spoken so far of bronchopneumonia occurring alone. Bronchopneumonia also complicates other diseases. This is of very frequent occurrence. Since the chest is not the main point of interest it is easy to neglect to examine the chest. When one wonders why the patient is not doing well a thorough examination of the chest may throw much light on the problem.

A case was recently called to our attention in which a man collapsed on alighting from a train. He was taken to a hospital with an obvious hemiplegia. In this instance the man died quite promptly. Examination postmortem showed a widespread bronchopneumonia which had not been found during life, as well as the cerebral hemorrhage. Had the cerebral symptoms subsided, as many do, it is easy to see how a continued fever, and failure to respond might have been of much concern.

A second group of pneumonias are those of the influenzal type. We say "influenzal type" to avoid a controversy as to the organism responsible. We refer to a pulmonary lesion found frequently during the influenza epidemics, in which the lungs were hemorrhagic, and very edematous. Consolidation may not be prominent, or even scarcely present. The striking thing about the illness is the disproportion between symptoms and findings. The patient is more ill than the findings would lead one to expect. There is absorption of very toxic material from a predominantly surface lesion in the trachea and bronchi. Later when lung parenchyma is included the illness may be extreme, still without consolidation but with an edematous lung.

Here again, unless the chest examination is thorough, the clinician may be in doubt as to the cause of the severe illness.

Lobar pneumonia is not frequently seen at present. There is evidence that lobar pneumonia is an epidemic disease, with fluctuation over 20 to 30 year periods. If such is the case we may expect the number of cases to increase very materially in the next few years, for it has been about that period of time since it was common.

Consolidation of the upper lobes may be rather difficult to demonstrate on physical examination. The changes occur rather rapidly in many cases. Perhaps it is a coincidence, but these upper lobe lesions are the ones we have been seeing in the past two years, and mostly undiagnosed. They have complicated other diseases, so the main focus of attention has not been the chest.

In summary, the most important points I wish to make are:

1. Frequent examination of the chest is necessary to avoid missing lobar or bronchopneumonia, especially as they complicate other diseases.

2. Any illness out of proportion to any local findings should call for careful and repeated examinations of the chest.

---

*Read before Omaha-Douglas County Medical Society, Nov. 14, 1933.

LABORATORY AIDS IN THE DIAGNOSIS AND TREATMENT OF PNEUMONIA*

A. S. RUBNITZ, M. D.,
Omaha, Nebraska.

While it is conceded that pneumonia may be diagnosed and treated successfully without any aid from the clinical laboratory, yet many points may be gained if the laboratory is consulted in the course of the management of a case of pneumonia. The laboratory may be of great assistance in sizing up the severity of the individual case, the progress, and, more so, if specific therapy is to be instituted.

The hematologic and cultural investigations of the blood are most important from the standpoint of diagnosis and prognosis.

HEMATOLOGIC FINDINGS:

Leucocytosis, both relative and absolute, is generally the rule in pneumonia. Pneumonia is notorious for its high leucocyte counts. Leucocyte counts from 20 to 30 thousand are quite common, and often one sees counts of 40 thousand or over in this disease. A low leucocyte count in a frank pneumonia is considered as a danger sign.

With the more recent advances in the qualitative studies of the blood smears we can judge from day to day about the progress of a pneumonia patient if a frequent check-up is done on the blood. Early in the disease the differential blood smear shows a marked neutrophilia with an unusually high percentage of staff cells; these may reach 40 to 50 per cent at the height of the infection. In addition to the predominance of the immature neutrophiles, there is a marked lymphopenia. Occasional metamyelocytes may appear, and, in the more critical cases, neutrophilic or even basophilic myelocytes may be frequent, i. e., a shift to the left is very pronounced. An increasing and persistent shift to the left from here on is indicative of a poor prognosis. On the other hand, if the blood picture begins to shift to the right, i. e., the number of the immature neutrophiles appears to be getting less, while the mature, segmented cells begin to show a relative increase, we may foretell that the patient is due for a clinical improvement. The improvement in the blood picture may precede the clinical improvement by twelve to twenty-four hours. In the uncomplicated cases, the quantitative and qualitative blood picture keeps on changing towards the normal, and the normal is usually reached in about a week or two after the temperature reached the base line.

AS TO THE CULTURAL INVESTIGATIONS OF THE BLOOD:

The majority of pneumonias are not bacteremic. Blood cultures are positive in a relatively small number of cases, probably around 25%. Attempts have been made by many to base the prognosis on the blood culture findings. The blood culture, while not an absolutely infallible criterion, in the matter of prognosis, nevertheless is a very true indication of the severity of the infection. By far the greatest number of fatal outcomes are found in the group which gave positive blood cultures and vice versa.

The serologic and chemical aspects of the blood in pneumonia are of little clinical value at the present.

SPUTUM:

Direct bacteriologic data obtained from the sputum analysis in pneumonia are of little value. The morphologic identification of the pneumococci is inconclusive. Any normal sputum may give organisms which are morphologically identical with the most virulent pneumococci. On the other hand, the sputum is practically the only source from which the pneumococci can be isolated for the sake of type-identification. The typing of the pneumococcus in question is of prime importance if specific therapy is to be used.

The urine does not give any worthwhile findings in pneumonia from the standpoint of diagnosis, prognosis or treatment, excepting some research problems which are more of academic importance, such as, the chloride excretion, presence or absence of precipitins, etc.

In the differential diagnosis of pneumonia from other acute infections we often avoid mistakes if we consult the laboratory. One may see a patient with a mild respiratory infection coming down suddenly with a severe chill and high fever. On closer investigation the case may prove to be a pyelitis. Cases like these are seen not only in children but also in adults. Again, cases are seen where the abdominal symptoms predominate. The patient may have severe abdominal pain, with the point of greatest tenderness in the right lower abdomen; with that, the temperature and pulse rate are elevated and the leucocyte count very high, practically all the clinical signs of acute appendicitis. However, one should not forget that the onset of pneumonia, both lobar and lobular, may present the same clinical picture. A good point to remember in such perplexing cases is that appendicitis, as a rule, will not give as high a leucocytosis as pneumonias. Of course, it takes a keen clinical observer to orient himself in the mass of evidence, and the laboratory data should not be overlooked.

---

*Read before the Omaha-Douglas County Medical Society, November 14, 1933.

Perhaps the greatest help that the clinician derives from the laboratory is in the diagnosis and treatment of the complications of pneumonia. Taking the average case, where the clinical improvement is evident, be it by crisis or lysis, and the blood picture begins to shift back to the left, one is put on his guard right there that a complication is imminent. It is out of the province of this short paper to enumerate all the complications of pneumonia. I may mention only one, the most frequent, i. e., empyema. In empyema, when the problem becomes surgical, the laboratory should be consulted rather frequently, until time is ripe for radical drainage. The nature of the aspirated material should not only be scrutinized with the naked eye, but the aid of the microscope should be sought in determining the optimum time for surgical intervention.

Lastly, we should remember that pneumonia is an acute infectious disease, systemic as well as local, and, therefore, is apt to involve most any organ or tissue in the body. Organs with a lowered reserve may not stand up as well under the strain; even previously healthy organs may rapidly deteriorate as a result of the overwhelming toxemia.

In a word, the clinicians attention should be centered on the body as a whole. To do that satisfactorily one cannot help but fall back on the laboratory as he goes on treating a case of pneumonia, the same as one utilizes a laboratory in the management of any acute infection. During convalescence new problems may come up every day, and the laboratory is of great aid in the solution of such problems, be it a question of kidney insufficiency, myocardial involvement, or any chronic ailment which becomes accentuated in the course of the illness.

In conclusion, I wish to mention that all the above enumerated laboratory aids make up only the minor part of the role the laboratory plays in the study of pneumonia.

By far the greatest help that we expect from the laboratory is in the prophylaxis and cure of this disease. The research laboratories are doing at the present their full share along investigative lines to combat the disease. Whatever we have accomplished so far in the nature of specific therapy comes from the institutional laboratory.

If any positive curative agents will be discovered in the future they will be along serologic lines, originated and manufactured in the laboratory.

SEROLOGY OF PNEUMONIA*

W. B. MOODY, M. D.,
Omaha, Nebraska

In the United States Registration area covering a period of ten years, 1920 to 1929 inclusive, there were over one million deaths from all forms of pneumonia. 52% of these were lobar. Quarantine offers little help owing to the infrequency of secondary cases. Control through immunization is more logical but as yet impractical as well as ineffective. Effort must be made and a program developed to prevent pneumonia as much as possible, but until this is accomplished direction must be turned to the improvement in therapy with the idea of reducing the already high death rate(1). Results appear to show that the death rate in Type I pneumonia properly treated with antibody serum during the first four days of illness has been reduced 50%. Analysis of results based on percentage are necessarily somewhat inaccurate due to the variation in incidence from year to year as well as in virulence and this variation applies also in different parts of the country and season even in the same year.

In order to accomplish improvement in therapeutic results studies of the characteristics of the etiologic organism are necessary and production of some sort of efficient antisubstance. A study of the results of such work during the past few years has developed an increase in knowledge of some of these problems.

Though various organisms have been demonstrated as a causal factor in all forms of pneumonia the one most frequently found is the pneumococcus. Described by Sternberg in 1880 and proof of its relationship to pneumonia established in 1885 by Fraenkel, the pneumococcus is a more or less typical gram positive diplococcus growing readily on ordinary laboratory media. Under certain conditions a capsule may be demonstrated. Virulence varies greatly. Endotoxins are for the most part produced. Though Neufeld first indicated that there were specific groups of pneumococci it remained for Cole, Dochez, Avery and others of the Rockefeller Institute to develop these groups and attempt the production of specific antiserum. Most of this work was done during the years 1913 to 1917 and though continued steadily to the present there has been a more rapid advance in knowledge in the past few years.

---

*Read before Omaha-Douglas County Medical Society, Nov. 14, 1933.

Cole and his coworkers developed, by injecting many strains into experimental animals, agglutinating and cross agglutinating the serum and strains, three specific strains. These were designated in order of frequency as types I, II and III. The latter was characterized by sticky colonies and termed pneumococcus mucosus. The rather large number of non-agglutinating strains were classed as Type IV. It is the further analysis of this latter group that has been recently developed.

Originally pure cultures of various strains of pneumococci were obtained and salt solution suspensions were tested for specific agglutination. The time lost in this procedure was so great as to render the method almost useless as an adjunct to proper treatment. Later the mouse method of isolation was developed by Dochez, Avery and others. This consisted of injection of a suspension of sputum into the abdominal cavity of a white mouse. The animal either died or was killed after eighteen hours and the cavity washed with salt solution, a fairly pure culture of pneumococci being obtained. This suspension was then tested for specificity. The results of this method proved quite accurrate but again the time consumed was too great for satisfactory results. Precipitin reactions were also carried out with good results from a similar procedure.

Krumwiede then developed a more rapid method which proved successful and was advantageous because the results could be obtained within sixty minutes. Sputum is boiled to coagulate and extract soluble substances. This extract is then layered over specific typing serum and a precipitin ring or faint cloud indicates a positive reaction. Difficulty in obtaining proper amounts of sputum and the fact that boiling often renders the specimen unsatisfactory for testing lead to the development of a combination of this and the mouse method.

This test is performed by injecting a mouse with a portion of emulsified sputum. After three to five hours aspirate some abdominal fluid, centrifugate and test the supernatant fluid for precipitation and the sediment for agglutination. The results from this procedure are accurate and can be obtained reasonably early. Urine specimens of patients suffering with lobar pneumonia may be tested for precipitation reaction with specific serum and at times fairly good results obtained but not sufficiently accurate to use routinely.

In 1929 Sabin(2) attempted to improve the technique of differentiation by injecting mice with 1cc of fresh sputum intraperitoneally, after three or four hours withdrawing a small amount by aseptic puncture and placing four drops on a glass slide. To each of these is added one drop of a 1/10 dilution of each of the three types of I, II, III immune serum. The slide is dried and stained with basic fuchsin. Wherever agglutinations occur positive diagnosis is made. Many observers using this method have obtained excellent results in a fairly short space of time.

Still striving to develop quicker and simpler methods Sabin(3) has very recently reported a new and improved test based on the observations of Neufeld who as early as 1902 noted that pneumococci mixed with specific antiserum in addition to agglutination show a characteristic swelling at the periphery. Two flecks of sputum are placed on a cover slip with a platinum loop 2 mm. diameter. An equal amount of undiluted rabbit antiserum is added (I and II types) and a loopful of alkaline methylene blue after two minutes. The cover slip is inverted on a hollow ground glass slide and examined with oil immersion lens. In true specific mixtures of sputum and serum, pneumococci are found surrounded by peripheral zones of characteristic appearance and distinct outline, the organism within is stained blue. The size of the zone varies and is larger in Type II, but the size is not so characteristic as the zone. The finding of even one diplococcus showing the reaction is sufficient to diagnose the type. The method is extremely accurate, is specific, no cross reactions are noted because rabbit serum has been found to be free from such agglutinations and except for the specific antiserum no special equipment is required. This research should prove extremely beneficial in determining types of pneumococci in pneumonia cheaply, quickly and easily.

Until 1928 three distinct types of pneumococci were differentiated, namely, types I, II, III. In that year Miss Cooper(4) and others working in Doctor Park's laboratory in New York City studied 220 strains of pneumococci reacting atypically or not all with any diagnostic antisera for types I, II, III. Rabbits were used for production of specific antiserum of various strains and by means of agglutination and absorption experiments new types IV to XIII were differentiated. Monovalent protective antisera were obtained for each group. In 1932 this study was continued and types XIV to XXII were reported. There are(5) probably many more groups, some have since been described but their infrequency makes further differentiation impractical. Antisera for clinical use for the various types are being prepared and results of these studies will be reported later.

From 1915 to 1931 in the United States, among 22,324 cases of labor pneumonia, type I was found in 20%, type II 10%, type III 16% and type IV 54%. European figures give type I 31%, type II 18%, type III 17%, type IV 34%. In order of frequency the cause of lobar pneumonia are types I, II, III, VIII, V, VII comprising 84% of the total. In bronchopneumonia types III, VIII, XVIII, X, V, VII, XX, II, XI, XIV or 81% of all.

Aside from academic interest in the study of such infections the determination of type is an important factor as a guide to prognosis and treatment. For many years studies have been carried out continually to develop a curative serum for pneumonia. At first specific immune horse serum was injected into patients with lobar pneumonia, using the intravenous route and the serum for that particular type. Results were only fair and the reactions severe. Huntoon then developed an antibody solution which was polyvalent for types I, II, III and was low in allergic reactions. Mortality rate for type I lobar pneumonia was definitely reduced but rather severe thermal changes were noted.

In 1930 Felton(6) succeeded in producing a concentrated antipneumococcus serum which has since been used extensively. Horses were injected with a specific type of pneumococcus. The serum obtained was then mixed with 20% anhydrous sodium sulphate, incubated twenty-four hours, filtered, and the precipitate dialized five to seven days. The contents of the sac were adjusted to a ph. 4.6 to 4.8 with the formation of a second precipitate which was removed. The fluid is then adjusted to 6.8, diluted four times with cold water and a white precipitate is thrown down which contains practically all the protective substances. These are dissolved in salt solution and a fluid is obtained which is high in protective power and practically free from chill producing substances. Concentration strength varies in different lots but by pooling several preparations this difficulty is overcome. The concentrate is many times the strength of the original horse serum.

Before administration inquiry should be made as to previous sensitization to horse serum and allergic tests made, the easiest of these being the ophthalmic test. 5 cc. of the concentrate are then injected intravenously. If no untoward symptoms develop one to two hours later 10 to 20 cc. are given and continued at two hour intervals until 40 to 100 cc. are given. In each cc. there are 1000 units, the cost to the patient is $8.75 per ampule of 10,000 units. Much larger amounts are necessary in Type II than in Type I pneumonia.

Reactions noted from administration of concentrate are variable. Mild serum reactions such as flushing, urticaria, nausea and vomiting, chills, are not infrequently noted, some sort of upset being noted in 40% but the various reactions are stated as not being severe. In specifically treated patients the mortality was found to be lower, fever and toxic symptoms subside more rapidly, pneumonic consolidation remains limited, bacteremia when present disappears soon after serum administration and when not present does not appear. Good results are due to early treatment and persistent treatment. In a controlled series of 209 patients with type I lobar pneumonia the nonserum treated patients death rate was 26.8%. In concentrated serum treated patients the mortality rate was 11.7% or reduction of about 40%. In a large series of supervised treatment of type I lobar pneumonia at Harlem hospital, New York City, the mortality rate of serum treated patients was reduced 42%.

In Type II pneumonia the value of serum treatment is even more important due to the fact that the average death date is nearly twice that of Type I lobar pneumonia. Early results of serum treatment in Type II lobar pneumonia were discouraging due to the lack of potency of the serum.

Using Felton's Concentrate as with Type I, Cecil and Plummer(7) found that the effect on the clinical course is less striking than with Type I cases, a rapid drop in temperature is rarely achieved but the toxic symptoms are felt to be less. In this form results depend on early and heroic application of treatment. In a series of 127 cases of Type II lobar pneumonia Finland and Sutliff(8) gained a 20% mortality in serum treated cases and 40% mortality in those not so treated. But an average of 175 cc. serum or 540,000 units was used within twenty-four hours.

SUMMARY

1. New types of pneumococcus have been satisfactorily demonstrated.

2. Specific antiserum can be developed for some of these.

3. Concentration of antipneumococcus horse serum has proved beneficial in treatment of Types I and II lobar pneumonia. So far no help has been obtained in Type III pneumonia.

4. Newer methods have increased the speed and simplicity of diagnosis of type of pneumococcus.

5. The cost of serum is at present too high for routine treatment.

BIBLIOGRAPHY

1. Heffron, R., and Anderson, G. W.: Two years study of Lobar Pneumonia in Massachusetts, J. A. M. A. 101: 1286. October 21, 1933.

2. Sabin, A. R. Stained slide microscopic agglutination test, Proc. Soc. Exper. Biol. and Med. 26-492. March, 1929.

3. Sabin, A. R. Immediate Pneumococcus Typing directly from Sputum by the Neufeld Reaction. J. A. M. A. 100-1584. May 21, 1933.

4. Cooper, Georgia, et al, Separation of Types among Pneumococci hitherto called Group IV. Journal Exp. Med. 46-461. 1928.

5. Ibid. Journal Exp. Med. 55-531. 1932.

6. Felton, L. D. Concentration of Antipneumococcus serum. J. A. M. A. 94-1893. June 14, 1930.

7. Cecil, R. L., Plummer, N. Pneumococcus Type II Pneumonia. J. A. M. A. 78-779. March 5, 1932.

8. Finland, M.; Sutliff, W. D. Specific Serum Treatment of Pneumococcus Type II Pneumonia. J. A. M. A. 100-560. Feb. 25, 1933.

SURGICAL COMPLICATIONS OF PNEUMONIA*

JOSEPH WEINBERG, M. D.,
Omaha, Nebraska

Except for occasional cases of lung abscess almost all surgery in connection with pneumonia has to do with empyema. Therefore, my remarks will be limited to this complication. Discussion of the signs and symptoms may be omitted as these are detectable in most cases by generally accepted methods. When a physician finds a sharp rise in the afternoon or evening temperature, either during the course of or soon after subsidance of pneumonia, he should be on guard against the possibility of empyema.

It is important to understand the mechanics of respiration and the mechanics of formation of a pleural empyema in order to properly treat the disease. Until fifteen years ago the death rate from empyema in the leading hospitals of this country was from 20% to 50%. Since then the mortality has been reduced to about 5% in these same hospitals. This change in mortality rate is due to the recognition of the effects of open pneumothorax on respiration and circulation, and an understanding of the formation of empyema.

There are differences of opinion on the exact manner in which empyema is formed. The following appears to be a logical explanation and is supported by experimental and clinical data. In most cases of pneumonia there is an accumulation of serous fluid in the pleural cavity, probably drawn into the cavity from the edematous lung by the negative pressure within the pleural cavity. If a lung in an advanced stage of pneumonia is examined at autopsy it will be found to contain minute abscesses, some of them in the depth of the lung and others just underneath the pleura. It is easy to conceive of rupture of a sub-pleural abscess with discharge of its contents into the serous fluid accumulation in the pleural cavity which then acts as an ideal culture medium. This fluid eventually becomes purulent and is walled off from the rest of the cavity by fibrinous adhesions and tends to localize posteriorly and inferiorly due to the position of the patient in bed.

The accumulation of fluid changes with time from a serosanguinous character to frank pus. While it is in the serous stage it is not walled off, but after it has reached the frank pus stage it is a localized abscess.

If one opens the pleural cavity before the fluid is thick and walled off he is certain to collapse the lung. This together with disturbance of circulation by pressure of air on the mediastinum may cause death of patient. If operation is performed at this stage the outcome is usually fatal. It is especially at this time that the individual cannot well tolerate an opening in the chest wall because he is already embarassed by sepsis and low vital capacity. There was a notion at one time that an individual would tolerate an opening in the chest wall no larger than the space between the vocal cords of the larynx. Later it was found by Duvall that wounded soldiers would tolerate a very large opening in the chest wall and for this reason considered that there was no danger in freely opening the pleural cavity. As a matter of fact neither extreme is correct. Some individuals with high vital capacity will tolerate a very large opening of the chest wall while others with low vital capacity will tolerate no opening.

---

*Read before Omaha-Douglas County Medical Society, Nov. 14, 1933.

There are two distinct stages of acute empyema, the stage of thin serous fluid and the stage of frank pus. It is essential that these stages be recognized in the treatment of the disease.

In the formative stage the fluid is thin but it will vary with the type of organism. In pneumococcus infection there is an early tendency for the pus to become thick while with streptococcus infection the pus remains thin for a longer period of time, often for two or three weeks. Also, there is a greater accumulation of fluid with streptococcus infection probably due to the greater edema of the lung. The chief concern in this stage is to relieve pressure and to relieve toxicity. If it is found that fluid has increased to such an extent that it is greatly decreasing the vital capacity as shown by difficulty in respiration, fluid should be aspirated at frequent intervals, usually every two or three days. This may be done with a Luer needle attached to a large syringe. This aspiration with Luer needle is not to be confused with closed method of drainage. By this method the pressure on the lungs and heart is relieved and at the same time the physician is able to determine the stage of the pus, that is, whether it is thick or thin. Occasionally aspiration alone may cause the empyema to subside entirely. If so there is no need for later drainage. At the same time it is necessary to give the patient an easily assimilated high protein diet because of the increased catabolism during this stage of the disease. It is also necessary to treat the pneumonia which may be coexistent.

Under no circumstance should the chest be opened during this period as an in-rush of air will cause collapse of the lung. During the World war when streptococcus pneumonia was at its height in camps in this country, the surgeons thought they had an ideal opportunity to treat empyema in its very beginning. As a result, thoracic drainage was instituted at this formative stage and the death rate rose to 70% to 80%. The reason for this increased death rate was the absence of fibrinous adhesions which would in a later stage hold the lung to the chest wall when the empyema pocket was drained. Often times it is difficult to wait with operation until the pus is thick, especially if members of the family are pressing one to relieve the condition. To be influenced by such urging is to court disaster.

As soon as the fluid which is aspirated is thick the surgeon knows that adhesions have formed and that the lung is now fixed. At this stage the cavity may be opened with safety. This stage will usually be reached with streptococcus empyema within two or three weeks after the appearance of the effusion. With pneumococcus infection it usually occurs at the time of crisis or in the week following. Too long delay may result in chronic empyema due to the rigidity of the thickened pleura. However, it is better to err on side of delay than on side of too early operation.

The method of drainage is relatively unimportant. As for open or closed methods, both have their followers. Either method correctly performed is usually satisfactory. Personally I prefer the open method. My objection to the closed method is that in the best of hands it is found necessary to perform open operation eventually in many of the cases so treated. If the purulent accumulation is fibrinous there is difficulty in obtaining drainage through a tube with the closed method.

Rib resection is rarely necessary in open drainage. An adequate opening may be obtained by excising the intercostal muscles, and the space thus obtained is large enough for satisfactory drainage. With open drainage, the incision of choice is in the 7th or 8th interspace in the posterior axillary region. This opening allows drainage with the patient on his back or on his side. At the first dressing a large piece of rubber dam wrapped around a piece of gauze is inserted into the wound to maintain drainage. A stiff rubber tube is liable to injure the lung. The soft rubber dam keeps the wound widely opened and it is easily removed without pain. This last feature is an important one with children as it may be very difficult to do dressings after a painful beginning. Carrel-Dakin treatment is started the second or third day after operation. In carrying out this treatment it is essential that the exact technique be closely adhered to. Dakin solution (.45% sodium hypochlorite) is injected through the Carrel tubes every hour during the day and every two hours at night. The tubes must be long and well anchored outside of the wound, otherwise they may fall into the pleural cavity. Such an accident may be the cause of chronic empyema and should be carefully guarded against. In most cases the cavity is completely closed within four weeks with this treatment. The chief causes of persistence of empyema cavity are delayed operation, closure of the wound before the cavity is completely obliterated, and tube or other foreign body left in the pleural cavity.

SUMMARY

1. There is great danger in opening the thorax before frank pus is formed. One could not choose a more unfavorable time for creating an artificial pneumothorax.

2. The difference between streptococcus and pneumococcus infection should be recognized.

3. The treatment should be based on a recognition of the physiology of open pneumothorax.

PROGRESS OF SURGERY

REVIEW OF THE LITERATURE OF THE SECOND HALF OF 1933

HERBERT H. DAVIS, M. D., F. A. C. S.,
Omaha, Nebraska.

THE BREAST

Moschowitz(1) has described a condition which is possibly inflammatory in a vestigial structure, the milk ridge. He found that in certain individuals there persisted abnormally the milk ridge in some part of its normal course. This ordinarily was absolutely symptomless and, therefore, not discoverable. Occasionally its inflammation may produce symptoms of pain or functional disability, or both, either below the breast extending for a variable distance upon the abdomen, or above the breast extending towards the corresponding shoulder and axilla. Examination revealed a cord-like structure in the location of the milk ridge. It existed in both sexes.

THORACIC SURGERY

Graham(2) has successfully removed the left lung and many of the tracheobronchial mediastinal glands in a one stage operation. The operation was done because of a carcinoma of the upper lobe bronchus which was so close to the lower lobe that, in order to remove it completely, it was necessary to remove the entire lung. This is apparently the first case in which an entire lung has been removed successfully in one stage.

GASTRO-INTESTINAL DISEASES

Elman(3) has presented 37 cases of a type of acute pancreatitis with oedema, swelling or induration which was distinct from the usual cases of acute pancreatitis in showing no evidence of gland necrosis, hemorrhage or suppuration. It was an acute inflammatory lesion of the interstitial tissue of the pancreas in which hemorrhage or necrosis played no part.

This disease entity was often mistaken for gallbladder disease. Pain was the predominant and universal symptom. Its severity was so great that prostration was present in many cases, but in only a few was it accompanied by the signs of shock so often seen in acute pancreatic necrosis. The abdominal pain and tenderness were general or in the epigastrium. In half of them the pain radiated to the back. Glycosuria occurred in six of the cases. There was often marked increase in the amylase of the blood, and in lipase and diastase of the urine.

Pathologically there was oedema of the pancreas itself or of the peritoneum overlying it. Also microscopically the striking finding was the marked infiltration of acute (polymorphonuclear) inflammatory cells into the interstitial tissue between lobules as well as acini, often with oedema. In 16 of the cases the gallbladder was also diseased. Jaundice often occurred. Fat necrosis was found in 15. There is experimental evidence that fat necrosis may be produced without actual necrosis of the pancreas.

Johnstone, Clasen and Orr(4) reported a series of six dogs in which the major pancreatic duct had been transplanted into the jejunum and the pancreatic secretion preserved below the high jejunal obstruction. These dogs lived an average of 23½ days, which is approximately three times as long as control dogs having simple obstruction in the same location. These experiments confirmed those of others that the early death from high intestinal obstruction is intimately associated with a loss of the pancreatic juice.

A very careful experimental study was made by Orr and Carlson(5) on the effect of morphine on the movements of the small intestine and sphincter muscles. They found that in ordinary doses morphine gave an increase in tone, in amplitude of segmentation movements and in the frequency and amplitude of peristaltic waves. Large doses stopped peristalsis and decreased the tone, but segmentation movements were little affected and were at times somewhat increased. The duration of the effect of the average dose of morphine on the intestine was about six hours.

Morphine stimulated the obstructed intestine as well as the unobstructed. There was no increase or decrease in response to morphine as death approached. A single dose of morphine caused retention of the barium meal in the stomach. The emptying time was at least twice the normal in both animals and man. A marked delay in the emptying of the ileum in the dog was noted. Morphine evidently produces a spastic action on the sphincters which delays the progress of barium through the gastrointestinal tract.

ENDOCRINE SURGERY

A very interesting report on the rationale and the therapeutic results of total ablation of the normal thyroid gland in a series of 10 patients with congestive heart failure or angina pectoris has been made from the Harvard University Medical School.(6).

The clinical observations which provided the rationale for this procedure began in 1924 with the development of an accurate method for measuring the velocity of blood flow through the lungs. Measurements in more than 600 subjects demonstrated that normally the velocity of flow was directly determined by the metabolic demands of the body. In thyrotoxicosis the blood flow is increased and cardiac symptoms are common. In none of their myxedematous patients was there any evidence of circulatory insufficiency. The thought therefore arose that if the normal metabolic rate of the patient with congestive failure were reduced, his blood supply, while not necessarily altered, might nevertheless be sufficient for the lowered needs of his body. These considerations in regard to congestive failure were equally applicable to angina pectoris. The higher the metabolism, the greater is the work of the heart which necessitates an increased coronary blood supply.

The investigators found that subtotal thyroidectomy was insufficient to give more than an occasional temporary benefit and practically no lowering of the basal metabolic rate in cases with previous normal thyroid glands. However, in a series of ten cases, they found the results of total thyroidectomy to be most gratifying. The operative technique is given in the *American Journal of Surgery*, August, 1933, 21. 173. Including cases given in a previous communication, 16 such operations were performed with only 2 operative deaths, which is a very low mortality considering the poor physical condition of the patients and their lack of cardiac reserve.

The investigators realize that this work is still in the experimental stage. Because all operations have been too recent to know the ultimate duration of the beneficial results, they felt that this operation should be undertaken at the present time only on patients with congestive heart failure or angina pectoris in whom the operative risk is fair and in whom all other medical procedures have been employed without the desired therapeutic results. Patients with active coronary disease, active infection, repeated pulmonary infarctions, vascular accidents or rapidly progressive syphilitic cardovascular disease are probably unfavorable subjects.

Gutman, Sloan, Gutman and Palmer(7) have found the effects of diiodotyrosine and of inorganic iodine are essentially the same. Diiodotyrosine has not been shown conclusively to have any physiologic activity that could be regarded as antagonistic to thyroxine. It does not lower the basal metabolism of normal animals as might be expected. They prepared thirty patients with hyperthyroidism for operation by the administration of diiodotyrosine. The reports of earlier workers that diiodotyrosine induces clinical remission and a fall in basal metabolic rate were confirmed. The degree and charactertistics of the clinical and metabolic response were essentially similar to those obtained with compound solution of iodine and sodium iodide. The total iodine and thyroxine contents of the resected thyroid glands were found to fall within the range of variation of glands obtained from patients given inorganic iodine. No evidence was obtained to justify the impression that the effect of diiodotyrosine in hyperthyroidism is specifically different from that of other forms of iodine.

In a study at the Cleveland Clinic of 42 patients with hyperthyroidism, Shirer(8) showed that hypermotility of the gastro-intestinal tract occurred in this condition but that the degree of hypermotility was not an index to the severity of the hyperthyroidism. It was decreased, usually markedly, after thyroidectomy in 76 per cent of the cases studied. Hypermotility and anacidity occurred concommitantly in 12 cases of hyperthyroidism in this series.

In a very complete study in the Department of Pathology at the University of Michigan, Weller(9) found that the liver could be, and frequently was, involved in Graves' disease. In these cases of exophthalmic goiter, clinically there was icterus occasionally, marked degrees of which were shown to be of serious import; physiologically these cases showed altered liver function; experimentally there was evidence of hepatic dysfunction following administration of thyroid substance and thyroxine, and morphologically there were structural changes in the liver varying from slight degrees of chronic hepatitis to a widespread degenerative and necrotizing process which must be considered an "acute yellow atrophy."

In a series of 48 carefully selected cases of Graves' disease well marked hepatitis was found in 54 per cent; while a matched control series yielded but a single case (2 per cent) with well marked hepatitis. This liver lesion was interlobular, patchily distributed, involved the peripheral portion of the lobules to a moderate degree and showed relatively more fibrosis and lymphatic infiltration than bile duct proliferation. He characterized it as a "patchy chronic parenchymatous interlobular hepatitis." Correlation with the severity and duration of the thyrotoxicosis was indicated but as yet unproved.

NEUROSURGERY

Saito, Kamizawa and Kato(10) have injected an emulsion of lipiodol into the nerves or perineurally as a means of visualizing nerves roentgenologically in patients. No unfavorable symptoms followed during and after the injection, such as pain, fever, neuralgia or paralysis. Intraneural injection is made after the nerve is exposed during an operation. In this case the emulsion will diffuse centrally, while in the perineural injection it will diffuse towards the periphery. Resorption of the injected emulsion soon took place, it taking much longer in the case of intraneural injection.

By these methods, the authors were successful in neurography and stated that epidural and extradural myelography will also be possible, if the emulsion is injected through the sacral hiatus. They believed that by the foregoing methods, some particular diseases of the nerves, such as neuritis, amputation of nerves, neuroma and spinal cord tumor can be examined.

White(11) stated that pain from the heart and ascending arch of the aorta is conveyed to the sympathetic trunk by fibers running in: (a) the middle and inferior cardiac nerves to the corresponding cervical sympathetic ganglia, and (b) recently discovered nerves which run directly across the mediastinum from the posterior cardiac plexus to the upper thoracic sympathetic ganglia. The painful stimuli thence enter the spinal nerves through the white rami communicantes as there are no white rami in the cervical region, all pain sensation must descend to the upper thoracic ganglia before it can reach the spinal cord. Pain referred to the left or right precordium or the arm enters the cord only on the same side. The vagus nerve carries no important pain fibers from the heart. Desensitizing the skin areas to which cardiac pain is referred by section of the intercostal nerves does not give permanent relief of cardiac pain.

He found, therefore, that operations on the cervical sympathetic trunk, even if they include the stellate ganglia, cannot interrupt all the pathways of cardiac pain. On the other hand, the upper thoracic sympathetic ganglia or their communicant rami or the posterior roots of the corresponding spinal nerves are the logical points at which to interrupt these pain stimuli. In each of the author's 32 cases in which they were sure of a successful interruption of the above mentioned structures, angina pectoris disappeared.

He concluded that the best surgical procedure is first attempting to block the thoracic sympathetic nerves with alcohol. The cases which fail to obtain satisfactory relief, provided they are reasonably good surgical risks, can finally be subjected to section of the posterior spinal roots.

MISCELLANEOUS

In 1929, Hammett and Reimann of the Lankenau hospital, Philadelphia, showed that certain sulphydryl-containing compounds stimulated cell division and growth, thus aiding greatly in the healing of chronic ulcers. Now Brunsting and Simonsen (12) of the Mayo Clinic have shown the practical value of cysteine, which is a naturally occurring sulphydryl-containing amino-acid, obtained by the reduction of the disulphide cysteine, a product of the hydrolysis of wool or of the hair of man, in stimulating granulation tissue and epithelium. When applied to various types of ulcers and wounds, it also inhibited bacterial growth. It must be freshly prepared as, after oxidation to the disulphide, the compound is inert. In a group of 200 cases of ulcer treated with cysteine, there was decided stimulation to healing in 50 per cent; in 25 per cent the beneficial effect was promising; while in the remainder the results were desultory. They also found that moist dressings with this compound were very helpful in preparing granulation tissue for skin grafts and also advised applying it at times after the skin graft was applied.

BIBLIOGRAPHY

1. Moschowitz, A. V.: Vestigial Mastitis; Ann. Surg., November, 1933, 98, 855-867.

2. Graham, E. A., and Singer, J. J.: Successful Removal of an Entire Lung for Carcinoma of the Bronchus; J. A. M. A., Oct. 28, 1933, 101, 1371-1374.

3. Elman, Robert: Acute Interstitial Pancreatitis; Surg., Gyn. & Obstet., Sept., 1933, 57, 291-309.

4. Johnstone, P. N., Clasen, A. C., and Orr, T. G.:

The Role of the External Secretion of the Pancreas in Experimental High Intestinal Obstruction; Surg., Gyn. & Obstet., Oct., 1933, 57, 483-487.

5. Orr, T. G., and Carlson, H. E.: Effect of Morphine on the Movements of the Small Intestine and Sphincter Muscles; Arch. Surg., Aug., 1933, 27, 296-305.

6. Blumgart, H. L., Riseman, J. E. F., Davis, D., and Berlin, D. D.: Therapeutic Effect of Total Ablation of Normal Thyroid on Congestive Heart Failure and Angina Pectoris, Arch. Int. Med., Aug., 1933, 52, 165-225.

7. Gutman, A. B., Sloan, L. W., Gutman, E. B., and Palmer, W. W.: The Role of Diiodotyrosine in Hyperthyroidism: A Comparison of Diiodotyrosine With Inorganic Sodine, J. A. M. A., July, 1933, 101, 256-259.

8. Shirer, J. W.: Hypermotility of the Gastro-Intestinal Tract in Hyperthyroidism, Amer. J. Med. Sc., July, 1933, 186, 73-78.

9. Weller, C. V.: Hepatic Pathology in Exophthalmic Goiter; Ann. Int. Med., Nov., 1933, 7, 543-560.

10. Saito, M., Kamizawa, K., and Kota, S.: Roentgenologic Visualization of the Peripheral Nerves; Neurography in Vivo.; Amer. J. Surg., Oct., 1933, 21, 78-85.

11. White, J. C.: Experimental and Clinical Studies in the Surgical Treatment of Angina Pectoris; Ann. Int. Med., Aug., 1933, 7, 229-239.

12. Brunsting, L. A., and Simonsen, D. G.: Cutaneous Ulcers Treated by the Sulphydryl Containing Amino Acid Cysteine, J. A. M. A., Dec. 16, 1933, 101, 1937-1940.

THE MEDICAL PROFESSION*

B. F. BAILEY, M. D.,
Lincoln, Nebraska.

The medical profession is an old profession and seems to have had its origin with barbers and priests and now it has evolved until it is more or less the plaything of the politician. In the early history so far as we can trace it there was much of myths and legends and among the devotees Aesculapius was the noted. The legend reads, "Pluto was so disappointed at the few arrivals in Hell that he complained to Jupiter and it cost Aesculapius his life."

The Trojan War really began our medical and surgical history and as after the Civil War there was a sporadic and after the World War continuous increase and improvement in medical knowledge. In the old days when they appealed to the superstition of the people they kept venomous serpents about the temples and they were used to impress the public. We do not keep them for the same reason but I am wondering if the serpents have not invaded our profession with the temptation to destroy us as well as to injure the harmony among us, as serious in intent and in activity as was the serpent of Eden. The old Aesculapian temples were filled with symbolism and superstition. nevertheless history tells us they were not without marked mercenary motives. And then came the Pythagoreans, called the periodic or ambulant physicians because they first went from house to house visiting the sick. They surely made some advances and reasoned to no small extent from cause to effect.

Empedocles was one of the most prominent of these ambulant physicians and when a pestilential fever swept his native city he stopped its course by closing with a high wall the canyon through which the sirocco blew into Sicily from the west. And again he brought to a speedy close a serious epidemic by directing two streams of pure water into the stagnant water about the city of Selinus. So we know that the sanitary district existed in primitive form even in that day.

The Greeks brought to the greatest perfection the gymnasia. Hippocrates from the Island of Cos said to have traced his ancestry from Aesculapius did with his own writings and those of others which he collected, make up the Hippocratic collection, the foundation of medical literature. It is still worth reading, for instance, he said, "The best physician is the one who is able to establish a diagnosis."

We hear about the great libraries of today and still think of those far away historical days, as those of primitive life. The library of Pergamos consisted of 200,000 volumes, and the one at Alexandria, 600,000 to 700,000 volumes, and Herophilus who was born in the 4th century before Christ first performed the dissection of the human body and his name is honored in our profession by the Torcular Herophili. Galen who died in 200 A. D. was an egoist but an analytical and scientific investigator and he left much as a help to future advance. Hippocrates was more scientifically exact than interested in theoretical discussions. Galen was theoretical but he sought scientific proof of his hypotheses. During this Greek period capability and good character were demanded and charlatanism was checked. In fact in the Greek period there accrued more to charity and to the benefit of humanity than to science, yet a foundation was laid in anatomy and in knowledge of functions.

Had I time I might go on indefinitely with the interest in medical history which has always been mine. Then there have been Renouard, Harvey, Sydenham, Des Cartes', Malpighi, Pare', Wiseman, Lord Lister, Simpson, Simms, and so on until you come to our own day when the history of 50 years gives us so many distinguished in character and in work that it is not possible or fair to idealize one above another in this galaxy of nobility.

---

*Part of an address given at the banquet of the Western Nebraska Clinical Assembly, North Platte, December 4, 1933.

Our profession was built in the beginning on symbolism and superstition, thus establishing a superstitious faith but tinctured with the mercenary. Then a mixture of the superstitious with the beginning of science but still mercenary, and still later a search for facts in a scientific way and in a scientific atmosphere until now we have a science and technique that seems almost to bar a more splendid future. We have the heritage of centuries upon which we of the last two generations have laid the capstone. The profession has reached this place of eminence and nobility through the work of many untiring souls.

Our profession has progressed as has the world and as we have this heritage of knowledge and power and the wide field in which we work we have a greater responsibility. Having this responsibility we need to look to our own character and our duties to the world. Our field, our work, is to prevent and relieve disease. It is a work that follows in the steps of the Great Physician. It is also our duty to so organize and serve that we may direct and carry on our work without dictation from those who cannot see our necessities, our viewpoint, our goal, dictation from those who cannot see our goal except as mercenary, our ideal except with selfish interpretation.

To do this we must accomplish a close, sympathetic, loyal organization, and certanly study that this organization may be just, fair, unselfish, yet still protective. No man, no business, no profession, is capable of its highest possibilities that does not take into consideration in plans and action those visions that make it possible to equip by study, by industry and by financial acquisition for the greatest possible efficiency. Many are thinking along these lines.

Dr. Wiley recently said, "If civilization is to survive our old time virtues must be brought up to date. It brought men together, established their unity and common responsibility, the family and tribe, if they were to survive have had to hold together. We need justice, tolerance, honesty and moral courage." A splendid quotation. Julian Huxley also said, "One of the next duties of science is to study social life." Another has said, "There exists the absolute necessity of turning a larger part of the tremendous intellectual power exhibited in scientific thought and research into social and ethical fields, if our western civilization is not to continuously decline." Unity of organization and high purpose, with protection of ourselves while giving to the ethical every service and consideration. Our profession is the only profession or business that comes into intimate touch with the somatic and spiritual welfare of the race from birth to the grave.

At this time, at least recently, we have been criticized under the title of the "High Cost of Medical Care," harshly and with an organized determination to dictate our methods of financial procedure and our income therefrom. Now let us reason together: True, the cost of hospital and medical care has increased but scientific advance and the high cost of all physicians' and surgeons' supplies are as much the cause as any one thing. But no word has been spoken of this burden upon our shoulders. Those who supply our instruments, our drugs, our serums, our vaccines, etc., have never been questioned. The expense of the detail man who urges us to buy what our scientific journals have told us about all must be shared by the public while it is charged to us as our expensive service. The public demand at every point is luxury and lead the doctors to vie with each other in expensively equipped offices. The hospital expense is classified as a great part of the high cost of medical care but who has demanded it. The public.

We have builded hospitals, extravagant in design and ornamentation, again vying one with another in the construction of the most ornate. What we need in hospitals is clean, cheery, efficiently equipped efficiency. The ornate never adds to its curative powers. Millions have been spent in this way without adding one whit to efficiency. Nursing schools and homes have in extreme expenditure added to unnecessary expense in administration whereas I question if the nurse has become more competent to serve the patient and the doctor. Surrounded in many nurses' homes with not alone comfort but luxury, it is hard now to send the nurse to the humble home where she may be most needed.

To return to ourselves—who for generations past has served so much for sweet charity's sake as the doctor? From whose sales has there been such a large share for which he has not even asked pay? What business or profession has been on call 24 hours in the day in sunshine and storm, in heat and cold, answering the call of suffering when perhaps his heart was nearly broken from anxiety over sickness in his own home? Sales—did I say, of the service of our profession? Yes, sales. We have nothing to sell but our talents, the result of our education, our time, our sacrifice. Today the greatest demand is made for social relief in the history of the world. Government, federal, state, county, municipal, private, giving all to give relief. People are housed, clothed, fed, but all these are paid for from funds allotted for the purpose. No one expects rent to be given, the butcher or grocer to give of his foods, the merchant to give of his stock in trade, but our only stock in trade is our time and our ability to serve and from these we must derive our livelihood. Ah—but our hearts have many a time been warmed by this ability to serve so that we almost forgot the cold of the blizzard or the heat of the summer sun.

But there is in all fairness a limit. If we owe the world much, the world owes us a fair recompense and consideration. We have never had it to full extent. We are receiving in decreasing amount. What shall we do? What is fair and just? First we must be united and just and ethical as between ourselves. We must cease to contract at figures that are below a fair compensation. We can never do this except by decisions by organized medicine as to fair compensation for certain services, by the honest and strongly drawn rule of ethics that must be lived up to by every man in the profession who would be recognized by his fellows. You say this cannot be done, that municipality, county, state, government, will not stand for it.

But if we are united—remember the world must have us. No one else can give our services and if we are absolutely united we must be listened to. Look at the public hospitals and clinics that are serving the public and have come to receive not only the poor but those who are amply able to pay. And so the burden becomes too heavy to allow of the best service. In the old days the insane were placed in asylums principally for custodial care. Now the same plan survives though we know the insane perhaps need more careful diagnosis than almost any case that comes to the profession, and yet the rich and poor alike are cared for by the taxpayer. What wonderful care could be given to the poor if only the poor were served. How often we see realized the old saying that one father can take care of ten children easier than ten children can take care of one father. How often they prefer to turn to charity while they conserve his estate. So much to say, but I must not weary you.

For ourselves, I do not believe we should have as our goal the amassing of a great wealth but I do believe we should be allowed to aim at independent support for ourselves and those dependent upon us. I do believe the county and municipal funds should take into consideration in their budgets the fee for medical attention, as well as the cost of supplies from the butcher and the baker. I do believe a fair fee for charitable cases should be agreed upon and that they should be allowed to have the physician of their choice, and I believe that in that case conscientious adherence to necessary service and not padded rates should be the price of professional respect and fellowship in societies. I believe in questionable cases the censors or a similar body should be the judges.

Our life and our service must be such that we can respect ourselves and build a well earned dignity of life that the world may respect us. Do not misunderstand me. We shall always, I believe and hope serve many a person either, without pay or for long deferred payments because they are our own friends or friends of our professional life, or because we know they have tried and failed, and because we are glad to serve them in a way that they may save in self respect and not be thrown into the great cauldron of public charity. What we desire is to extend our charity by choice and not by demand from the public activities of social welfare. That would conserve the money of the taxpayer, and we are of that class, while they let us carry the public burden. Indeed our profession has done wonders, finding the cause, removing it, or the effect of disease. Finding the activities of nature, whether beneficent or injurious, but after all, the poison gas of the World War was no worse than the equipment of a number of nature's creatures for chemical warfare.

Read an article in a recent popular monthly upon "Nature Invented them First." It takes away some of our conceit and shows too plainly that after all we are only learning to use the opportunities that have been given us. We not only have this duty of protecting ourselves but we should become active citizens participating in the plans and politics of the world. Rash experiments that lead to tremendous indebtedness for the federal government should be looked upon with fear and trembling for that indebtedness is bound to cripple our government and our people. We do not stop to think what a billion means, but if someone had begun to accumulate dollars at the rate of three a minute when Christ was born he would just now have the amount of over three billion that the public works program of the United States has provided for quick employment.

It is up to us as citizens of the world to care not only for the sick patient but to take an interest in our sick country, and to become judicial rather than erratic, so thoughtful as to be able to lead rather than always follow. The more bureaus that are established, the more money must be spent, the more positions of no mean salary, and the more we must approach the control of every line of business and our work by the government. The best way to avoid it is in the judicial control of all business and all professions by the members of the same.

We should study the necessary number of our physicians to be supplied for the necessary demand each year. We should study the rules of ethics that they may be in unison and that charlatanism may not be practised. We should agree upon a uniform system of fees judicially determined, taking into consideration localities, cost of living and the skill that has been attained. We should demand a fair consideration in the spending of the charity load.

And so in the quiet of an evening recently I took occasion to think these matters over and to suggest them to this meeting with the hope that they might inspire to thought, to action, to a harmony among the profession which cannot be broken. To me our profession is the noblest of them all. It not only serves the sick in body, but if our spiritual inspiration is sufficient we can often serve with better understanding than even the clergy. The whole human race is in the care of the clergy and the physician. The clergy serves the spiritual, the physician the body, which however is said to be the very temple of the living God. Our responsibility is great and we should remember that inasmuch as our government in the years that are past which have made history, has been founded upon the sacred, so we should found our work upon that basis though still remaining firm in reasonable self protection.

Do you remember how James A. Garfield said, "God reigns and the government at Washington still lives." Do you remember how President Hayes said, "Looking for the guidance of that Divine Hand by which the destiny of individuals and nations are shaped," and how Benj. Harrison said, "God has placed upon our head a diadem and has laid at our feet power and wealth beyond definition or calculation but we must not forget that we take these gifts upon condition, that justice and mercy shall hold the reins of power." And that Grover Cleveland said, "I know there is a Supreme Being who rules the affairs of men and whose goodness and mercy have always followed the American people and I know he will not turn from us now if we humbly and reverently seek his powerful aid."

Recent English research has rather definitely proved that the function of the nerves of the human body is carried on by waves as in sound and light. Let not the waves of discouragement, of depression, of criticism, of jealousy, of egoism, make us lose our nerve but let them function fairly and well, remembering the quotation of that thoroughly manly man, Grover Cleveland, who said, and again I repeat, "He will not turn from us now if we humbly and reverently seek his powerful aid."

And so I commend to this conference the early agitation for the formation of a committee of the state organization and of the counsellors districts to develop plans for a fair adjustment of the distribution and compensation of and for the charitable of our profession, remembering that only as we honor and respect each other, as we can be trusted by each other, as the world knows our confidence in each other, can we expect to be trusted and respected.

ENDOCRINES MAKE JOB FOR PIANO MOVERS

"When a fellow suddenly finds his weight increasing from a modest 350 pounds to a decidedly immodest 640, the Senegambian in the fuel is almost certain to have a noticeably endocrine complexion.

"That is what happened to a man in Chicago recently and, because nobody seems to have seen a therapeutic light on the subject, he was gathered to his fathers; whereupon practical complications arose. A gigantic coffin, seven feet long and four feet wide, had to be especially constructed. The morticians, (the stylish monicker for undertakers these days), juggled it into the apartment somehow, but when it was occupied they had to tear out the frame of a window and part of the brickwork and call a crew of piano movers to remove it.

"When we know all there is to be known about the ductless glands, such embarrassing occurrences should cease."

ENURESIS*

W. O. COLBURN, M. D.,
Lincoln, Nebraska

I was prompted to review this subject mainly from a selfish standpoint. Like every pediatrist, I have been confronted with these cases at rather frequent intervals, and the results obtained are too frequently disappointing. Enuresis is not only of clinical interest, but is a sociological problem as well. Such a syndrome is a heavy burden for a child to carry and affects his personality, undermining his self respect, implanting a repression, and generally, adversely affecting his moral and mental development.

Definitions of enuresis may be simple and of few words as "Involuntary emptying of the bladder," or a more comprehensive implication as, a disturbance of the physiology of micturition in which the physiologic control of the brain is blocked by stronger stimuli which have to do with the nervous mechanism of the bladder.

Etiologically many opinions are affirmed. Heredity in 56% of cases is reported by one author; a neurosis by Koplik and Holt; occult spina bifida in 35% of cases (Fuch's); phimosis with secondary irritation, irritation of the vulva or vagina, intestinal parasites, enlarged tonsils and adenoids, and endocrine disorders, are likewise suggested causes.

Cases have been ascribed to infectious diseases, scarlet fever, measles, pneumonia, otitis media and diphtheria. Incontinence has been attributed to prolonged stay in bed after operations often in orthopedic cases.

Bray, an English writer on allergy, compares the nerve supply of the bladder with that of the lungs. Just as constrictor fibers are supplied to the smooth muscle in the walls of the bronchi, through the cranial division of the parasympathetic system, motor fibers are supplied to the detrusor muscle of the bladder, and inhibitory fibers to the internal vesical sphincter through the sacral division of the same system. Stimulation of the parasympathetic system may lead to bronchospasm, or to the discharge of urine or both, while any endeavor to stimulate the sympathetic to counteract the asthmatic tendency may lead in addition to the cessation of bed wetting. It has been noted that ephedrin in some patients leads to inability to micturate due to spasmodic constriction of the vesical sphincter. The allergist suggests sensitiveness to certain proteins as the cause.

A detailed review of the anatomical structure of the neuro-muscular bladder control; the central nervous system; the reflex arc of the peripheral nerves, and the sphincter muscles are interesting, but somewhat beyond the scope of this paper.

As to sex and age, it is generally more frequent in boys than in girls. Many cases persist from infancy whereas other children have been trained properly, and then relapse. Helmholtz reports the greatest number of cases between the ages of 5 and 11 years. Very few cases persist beyond puberty. If urinary control is not affected by 3 years, then the condition is suggestive of being on a pathological basis.

As hinted in the beginning the real intent of this paper was to review treatment of enuresis. The many forms of treatment suggested in the literature, tend to indecision, and one is apt to convey such an admission to his patient resulting in the trial of many forms of treatment. A therapeutic approach might be analyzed in the following fashion.

First—Some physical irritant, such as parasites, phimosis, irritation of vulva or vagina, tonsils and adenoids. These conditions at least should be investigated and eliminated, better perhaps without promise of a cure, but as a possible factor in the habit.

Second—Neuropathic or nervous type. Hamill calls it a conduct disorder. The environment of the child is apt to be such as to lead the child into an atmosphere of discouragement. Hamill states "The expectations (ideals) of the mother are very powerful factors in the process of shaping the character of the child. Hence, I believe that it is a matter of prime importance that mothers should expect normal reactions in their children." Hamill believes it is up to the child to control the incontinence.

Pototzky (Berlin) dwells on the neuropathic type, hypersensitive children. Every effort is made to quiet the child's nerves transforming restless sleep to peaceful slumber. Be careful of exaggerated methods of arousing, but it is essential to thoroughly awaken the child at or near 11 p. m. for urination, then try to fix the awakening time in the child's mind upon retiring. He approves the auto suggestion, "I will not wet the bed" repeated several times on going to bed.

---

*Read before Lancaster County Medical Society, November 15, 1932.

Markey (Cleveland) supports the psychiatric side, saying that it is a well known principle that fixation of an individual on any of his bodily functions is the beginning of a neurosis, namely, mouth conscious may lead to speech defect. Digestive conscious to appetite disturbance and why not bladder conscious leading to enuresis. Parents and even physicians must be advised against the suggestion to the child of an underlying organic basis, "weak kidneys", shaming, or stigmatizing him before other children, all of which develops a true emotional conflict.

Crothers tells the child he can continue or stop the habit by his own will power. He insists that he wash the bedclothes and soiled clothing himself each morning. He has mother promise him 25 cents for each dry night in the first month, and $1.00 per week thereafter. He reports one child fell from grace twice the first week, once the second week and dry ever since.

Wooley gives the following directions to the mother. *Stop* all punishment or action that will arouse fear in connection with the habit. *Stop* shaming. *Stop* all arguing and rowing and dominating unreasonably. *Stop* all display of emotional concern and substitute an indifferent attitude. Treat mishaps in a casual and kindly way, so as not to concentrate the child's mind on the failures and difficulties. Stimulate interest in success by much praise, and rewards for dry nights. Avoid mention of wet nights. Never express a lack of faith in the child. Keep a gold star calendar of dry nights only. *Stop* "babying" by overaffection, etc. Never mention to the child that he has "weak kidneys" or that he will in after years outgrow the habit. Wooley continues with general rules which are the usual but will bear repetition.

First—Restrict fluids (milk, water, soup, etc.) after 4 p. m. The evening meal should be light and dry, consisting of cereal, custard, junket, jello, or fruit and bread. Avoid coffee, tea, salt, pepper and condiments at all meals. Especially avoid salts and sweets after 4 p. m. as these increase thirst.

Second—Empty the bladder before retiring and again at 10 or 11 p. m. Be certain that the child urinates freely at these hours.

Third—An afternoon nap if possible. No excitement or high tension after 5 p. m., such as exercise, reciting, competitive games, loud laughter, movies or exciting radio programs. The child should sit down and play quietly after 5 p. m. and retire early. Elevating the foot of the bed 6 inches is helpful.

Fourth—Drugs. The drug still used by many and administered more than any other is atropin. Amberg proves the pressure of the bladder is lowered and frequency of contractions of the bladder are decreased. These results are not constant however, so he does not believe that it is a dependable drug. Pototzky recommends a prescription of monobromated camphor and calcium lactate, given at bedtime. Barbital preparations are successful in many highly nervous children; they are worth a trial.

Fifth—Pathocrinal. Hyperthyroid type, especially in girls 9 to 13 years, also termed prepuberty hyperthyroidism, ovarian extract is therapeutically indicated. Hypothyroid type (myxedema, mongolism). Here the thyroid preparations seem to give results. Pituitrin has been given, and Jacobs reports its use in 50 cases—17 cured, 17 marked benefit, 16 no beneficial effect.

Sixth—The urologists are into the field, and older children who persist in incontinence should submit to a thorough urological examination. Urologists report such findings as, typical saddle anaesthesia of the perineum, urinary tract infections, pus, blood and bacteria in the urine. A large number of epithelial cells suggest a trigonitis. Residual urine is common (16%) continually irritating the bladder neck. One urologist states that he can do cystoscopic examinations in 85% of children without a general anaesthetic. When hypodermics of water, passing of sounds into the bladder, faradic current to bladder region, bad medicines, etc., apparently cure many of those afflicted with enuresis, one can realize how one look into the bladder of a child by the urologist might affect a cure, and I say this in all kindness to the urologist.

CONCLUSIONS

Enuresis is a pediatric problem, with a varied etiology, but usually of neuropathic origin. The cure is attained by numerous methods, much like in infant feeding. The physician in charge must have a clear cut plan of treatment. The mother must be taken into his confidence and a thorough study made of the environment of the child and then to convey to the mother the part she is to play in the psychological approach. This, together with the few generally accepted rules, as,

Little fluids after 4 p. m. Dry diet.

Increasing the intervals of urinations throughout the day.

Child quiet, preferably in a chair after 4 p. m.

Awaken the child at 10 or 11 p. m. for urination will usually result in a cure. Drugs have very little if any place in the treatment.

AFTER CARE OF INFANTILE PARALYSIS

MARY POTTS, R. N., Physical Therapist,
Omaha, Nebraska.

In the interval between the acute phase of infantile paralysis and the return of nerve function the muscles should be kept in tone and not allowed to stretch.

After the sensitiveness has subsided, physical therapy may be started. Then the operator may see the patient more frequently than the physician so she must be watchful and report any suspicious tightening of a muscle which may lead to contracture.

Treatment is aimed at maintaining nutrition, preventing contractures and re-educating the muscles.

Heat is applied, followed by massage. Massage mechanically stimulates the venous flow and this in turn increases the arterial blood supply; it facilitates the flow of lymph, and helps to empty the tissues of waste products. In these ways it is an aid in preventing atrophy.

Massage must be given with due regard for weakened muscles. If given too vigorously or for too long a time, it will cause fatigue and increase atrophy.

The most important part of the treatment is exercise to re-educate the muscles.

Before giving exercises the strength of each muscle affected must be evaluated.

Dr. Lovett's scale is as follows:

1. Normal.
2. Good—the muscle can overcome gravity and some resistance.
3. Fair—it can overcome gravity and perform part of the movement.
4. Poor—a slight movement but gravity cannot be overcome.
5. Trace—the muscle can be felt to contract but no movement of limb is possible.
6. Totally paralyzed.

These various strengths may be present in different muscles in the same extremity so the exercises must be devised to suit each one.

If the muscle is poor, gravity must be eliminated in the work it is asked to perform.

The various types of contraction give a good general idea of the various exercises.

Static contraction—this gives a simple holding exercise and is easiest of all.

Then the excentric contraction, as the patient himself supplies the resistance.

For stronger muscles the normal concentric contraction—at first free—then with resistance.

Resistance may be given manually or by means of weights and pulleys.

All exercises may be done more easily in water because the buoyancy of the water helps to eliminate gravity.

Deep breathing is essential in all cases—in those in which chest muscles are involved it is especially necessary.

Even if back muscles are not involved directly, much attention must be paid to the back, lest the paralysis of one or more extremities may lead to lateral curvature.

As the patient improves less time is spent on massage and more on exercise—as nothing will develop muscle strength like normal muscle contraction and relaxation.

FOCAL ENLARGEMENT OF TEMPORAL BONE AS SIGN OF BRAIN TUMOR

Ross H. Thompson, Philadelphia (*Journal A. M. A.*, May 27, 1933), discovered, in adults, aged from 23 to 28, three instances of focal bulging of the squamous portion of the temporal bone, due to an underlying brain tumor, which afforded valuable information for diagnosis and operation. In two cases, the bulgings probably occurred in childhood. Two cases were due to large gliomatous cysts; one, to a meningeal fibroblastoma. Two cases were unilateral; the other was bilateral, producing a milder bulging of the opposite squama. The meningeal fibroblastoma, arising from the lesser wing of the left sphenoid bone, in addition to the bulging of the left squama, was associated with hyperostosis of the bones of the corresponding side of the face. There is an influence of the growth of the brain on suture closure and on the size and shape of the braincase. The size and shape of the young plastic skull is especially influenced by direct pressure from an encroaching intracranial tumor in the region of the squama. The question arises as to whether or not a fibroblastoma of the base of the brain in the vicinity of the lesser wing of the sphenoid bone can produce hyperostosis of the facial bones of the ipsilateral side.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor.....Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman.....Madison
A. F. Tyler.....Omaha
B. F. Bailey.....Lincoln
R. B. Adams, Ex Officio.....Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. XIX February No. 2

CALL FOR PAPERS

If you wish to read a paper at the next annual meeting in May, 1934, please send your title and name to R. B. Adams, Secretary, Center McKinley Bldg., Lincoln, Nebr.

ANNUAL DUES

Your dues are now payable. Send $5.00 plus your local Society dues to your County Secretary.

MISUNDERSTOOD

Unfortunately, a construction not intended was placed on a paragraph in last month's Journal. The paragraph read that the officers had "done nothing" about getting the profession in line with Federal Relief money for care for the unemployed indigent "except gathering material." The idea intended to be conveyed was that they were gathering information but had not yet called a meeting.

Webster's Dictionary:

"MATERIAL. Data of any sort, such as notes, documents, sketches, etc., which may be worked up in a more finished form; as materials for a biography; hence facts, perceptions, ideas, etc., viewed as data for a further operation, as materials for thought."

FEDERAL EMERGENCY RELIEF FUNDS FOR NEBRASKA PHYSICIANS

The annual meeting of the councilors of the Nebraska State Medical Association was held in Omaha, January 15. Besides acting on the various reports always a part of the annual councilor meeting the matter of getting the organized profession in alignment with the Federal Emergency Relief Administration so relief funds may become available for medical care of the indigent unemployed, occupied the time of the council for the greater part of the session. Perhaps nothing ever before that body was as fully and as vigorously discussed as was the proposal of getting lined up with Federal Relief authorities so Nebraska physicians may be able to get something for medical service in to the indigent unemployed.

The accompanying circular letter from the secretary of the State association gives official information:

"This is to inform you that at the Councilor meeting of the NEBRASKA STATE MEDICAL ASSOCIATION, January 15, 1934, held in Omaha, the plan for Federal Medical Aid to the unemployed indigent poor arranged between the Federal Relief Administrator and the Association was unanimously adopted. The motion is as follows:

" 'The Council in session approves of the offer of the Federal Government for medical aid for the care of the unemployed indigent poor and that they hereby authorize the President of the Nebraska State Medical Association to appoint a proper Committee and arrange a proper set-up in accordance with the rules of the Federal Relief Administration.'

"The Committee mentioned above will consist of Dr. B. F. Bailey, Lincoln (chairman); Dr. E. W. Rowe, Lincoln; Dr. R. W. Fouts, Omaha; Dr. J. W. Duncan, Omaha, and Dr. A. E. Buchanan, Fremont.

"I quote the section from the letter of the Federal Relief Administrator stating the rates that will be granted at the present time:

" 'My decision would be similar to that which has been obtained in other states; namely, that we will pay fifty per cent of the bona fide going rate, that is, if $2.00 is charged in a city for an office call, we will pay $1.00. If $1.00 is charged in a small town for an office call, we will pay 50c. If $3.00 is the charge in the city for a home visit, we will pay $1.50, without mileage. If $2.00, plus mileage, is the practice in a small town or country district, for a home visit, we will pay $1.00, plus the same amount of mileage which we allow all of the people who travel for the Federal Emergency Relief and Civil Works Administration here in Nebraska. Namely, five (5c) cents per mile, both ways, outside corporate limits of the town in which the doctor resides.'

"This mileage is pitiable but it is absolutely the best that the Government representative in this state will do.

"A fee schedule for surgical cases has been sent to Washington for approval. We will inform you about this later. If, for any reason this set-up does not meet with the approval of your County Society you need not accept it and you may then arrange with the Relief Director for a plan of your own.

"Sincerely,
"NEBRASKA STATE MEDICAL ASSN.,
"R. B. Adams, Secretary."

It is believed that this set-up will be promptly arranged between the parties thereto and it is conceivable that by the time this *Journal* reaches the profession, or soon thereafter, the arrangement for Federal Relief may be in operation.

It must be understood by the profession that this relief is not all-inclusive. It applies only to "unemployed indigent poor." Persons now employed under the CWA are not eligible for this relief—they are supposed, theoretically, to be self supporting; neither does it apply to the paupers whom we have always with us and who are county charges. The quoted phrase, "unemployed indigent poor" covers the ones to whom this applies.

THE PUBLICATION BOARD CHANGES JOURNAL POLICY

The Committee on Journal and Publication at an annual business meeting held at the Conant hotel, Omaha, January 15, decided that more economies were necessary to keep within the income.

The facts are that the Journal Fund has investments approximating $8,000; that the income of the Journal Fund from advertising has fallen off very sharply, to at least one-half of what it was in times of prosperity; that the income from membership subscriptions and advertising is not enough to carry the load with the economies heretofore inaugurated and that the investments are at least partly tied up beyond immediate realization, even of interest.

It is, therefore, thought necessary for the present, at least, to abandon the policy heretofore pursued of furnishing cuts to illustrate articles, except in cases where in the judgment of the publication board, this is thought necessary. Those cases now in the editor's office will be handled as under the former policy, but in case of new copy the rule will apply.

The publication board has also decided to cut off from the complimentary mailing list all libraries in this state, except those connected with the two medical colleges in Omaha. Heretofore for a number of years the *Journal* had been mailed complimentary to a list of about 175 public libraries in this state.

Contributing factors to the problem of juvenile discipline and control: the razor-strop went out with safety-razors, the hair-brush with bobbed hair and the woodshed with natural gas.—Arkansas Gazette.

THE ENDEMICITY OF MALARIA IN NEBRASKA

The subject of malaria in Nebraska has always interested us, for in fifty years of practice in one community in north Nebraska, we have not encountered a case of endemic origin. Some time ago we undertook a study as to the existence of malaria in Nebraska which should be conclusive. Addison Sheldon of the Nebraska Historical Society informed us that in his boyhood days in Seward county he had the real "shakes" that placed him abed for several weeks at a time and he knew of others in the same community who were similarly afflicted.

Inquiry from a number of physicians in the southern part of the state leaves no doubt that occasional cases have been observed near Lincoln and along the Blue river near Beatrice.

According to Dr. Myron H. Swenk, chairman of the Department of Entomology, University of Nebraska, there is positive evidence of the occurrence of both *Anopheles punctipennis* Say and *Anopheles quadrimaculatus* Say in the state of Nebraska. He reports finding dozens of *Anopheles quadrimaculatus* Say engorged with blood and clinging to the top of his tent while camping on the White river, near Glen in Sioux county, Nebraska, during the summers of 1905 and 1906. In 1903, Prof. Lawrence Bruner collected specimens of *Anopheles punctipennis* Say in a building on the University campus at Lincoln, Nebraska, and about that time also found great numbers of them along Salt Creek near Waverly, Lancaster county, Nebraska. Howard, Dyar and Knab in their "The Mosquitoes of North and Central America and the West Indies" state the range of *Anopheles quadrimaculatus* as "North America east of the Rocky Mountains from Canada to Mexico," and give the range for *Anopheles punctipennis* as "southern Canada, United States and southward to central Mexico."

Although some medical dictionaries say that *Anopheles punctipennis* apparently does not transmit the malaria germ, this is not in conformity with statements on this point as secured from some of the latest books on Medical Entomology, as those by William A. Riley and by Robert Matheson, both published in 1932. They agree that *Anopheles punctipennis* is a vector of both tertian (or benign) malaria, the common form in the United States, and of aestivo-autumnal (or subtertian, malignant or pernicious) malaria, although they state definitely that it is not an important vector of those forms of malaria. All agree also that it does not transmit the quartan type of malaria. (*P. malariae*).

Anopheles quadrimaculatus is a very important vector of all forms of malaria, and is considered the most important species in malaria transmission in this country.

The apparent absence of malaria over a large part of Nebraska cannot then be due to the absence of malarial mosquitoes, but, because while the *Anopheles* genus does exist in Nebraska, it is not widely distributed, and the number of individuals is relatively small, and there are few hosts present in the state.

The editor would be glad to hear from any Nebraska reader who has seen cases of undoubted endemic malaria.

THE PHYSICIAN IN THE COURT ROOM

The experience of many now active in the practice of medicine goes back to the time when appearance in court by a physician as an expert witness was so rare as to be an event outstanding. Circumstances occasionally demanded professional opinion as to the sanity of a patient, or as to the testamentary capacity of a deceased patient.

Now-a-days so many of our professional activities have a socio-economic or a medico-legal aspect that any number of actions in the courts revolve largely or solely around expert medical testimony. Practically all workmen's compensation and very many public liability suits have major medical or surgical features.

With few exceptions, physicians make unwilling and indifferent expert witnesses. The circumstances surrounding litigation are not conducive to clear or coherent thought for most non-legal minds. The atmosphere of the court room is abhorrent to most physicians. It dispels their habit of scientific analysis of facts and it is difficult to avoid becoming tinctured with the partisanship that surrounds matters at court. The requirement to answer "yes" or "no" to a long and involved hypothetical question, often does not serve the interests of justice and does violence to the instinct of fair play in the witness.

To stress irrelevancies and to obscure essential facts seems a poor way to search out justice. To insist upon an answer to a question embracing a set of contradictory facts or false assumptions destroys the self-possession of the physician who neglects to demand that the question be made answerable before he essays an attempt.

Finally, every physician knows that statements of fact in medicine are frequently not susceptible to proof satisfying to the lay mind even by the most skilled exegete. In such cases conviction will be brought to judge and jury only by knowledge of the probity of the witness. No amount of direct or cross examination will help to elucidate the matter.

Since physicians, as members of the civic body, often complain of what they consider frustration of justice by legal whimsicalities and court room technicalities, is it to be wondered that the courts have little patience with, and give small consideration to, what they consider fine spun and inadequate theories of partisan medical witnesses? Too frequently consideration is forfeited by evident bias in testimony.

A short time ago after a long drawn out trial embracing much divergent and wholly irreconcilable medical testimony, the court said it "had no difficulty in applying ordinary rules of common sense in drawing ordinary conclusions of cause and effect from well established medical facts." It is not difficult to interpret this statement.

A physician is not employed to argue a case from the witness stand. He demeans himself and his profession by attempting it. Both his own interests and those of justice are best served by circumspect and direct answers to questions. Evasory answers and incomplete statements of facts, even though they be condoned by judge and jury, and even though they constitute no violation of oath, convict one of intellectual dishonesty.

With established facts as a basis, there is rarely wide divergence of medical opinion among physicians outside the court room. The same physicians with the same facts, as medical witnesses under oath, often find themselves in complete disagreement. As a consequence there is wide spread prejudice against all expert medical testimony. To the profession itself this is a situation to be deplored. To the laity it is a spectacle that is entirely irreconcilable with the traditions and pretensions of our profession.

—J. W. Duncan, Omaha.

EDITORIAL PARAGRAPHS

Fifty unemployed nurses have been requisitioned by the CWA to do community health nursing in this state.

The American Public Health Association announces that its sixty-third annual meeting will be held in Pasadena, California, September 3-6, 1934.

In the death of Dr. Arthur D. Dunn. Nebraska and the middle west has lost one of its greatest clinicians and the Nebraska State Medical Association one of its strongest supporters.

The Southeastern Surgical Congress will hold its fifth annual assembly in Nashville, Tennessee, March 5, 6 and 7. The Andrew Jackson Hotel will be the hotel headquarters and the lectures and exhibits will be in the War Memorial Building.

Chief Little Lance, last of the Ponca Medicine Men, died recently in Oklahoma. The Ponca Indians were moved from their former reservation in what is now Boyd and Keye Paha counties, Nebraska, in 1872. Since Chief Little Lance was reputedly 107 years old he must have been a medicine man in what is now Nebraska in his early life.

The *Ohio State Medical Journal*, discussing collections, says "the physician should never intimate to his clientele that collections are slow—even if they are. Make each patient believe that other patients are paying promptly and in full. Such a plan is likely to stimulate payment by those who might be inclined to neglect settlement of their accounts."

The paid membership of our state association for 1933 was 1049. In 1932 the membership was 1071; in 1931 it was 1182. It is worthy of note that the loss in membership between 1932 and 1933 was but 22. Physicians believe in organized medicine and support it right royally. We hope those who by force of stress dropped out will this year feel able to return to the fold.

We have just read a recent publication, "The Joy of Living," by Dr. Franklin H. Martin, Chicago. Founder and Director-General of the American College of Surgeons. It is an autobiography and one of the most entrancing human interest stories obtainable. Born to pioneer parents in the woods of Wisconsin and to all the hardships that came with that kind of a life, orphaned in early childhood, his father having died in the War of the Rebellion, he grew to young manhood, taught a country school at $18 a month, decided after a few years to study medicine, started to medical school in Chicago with about $200 to carry him a year, batched, etc., and after three years was graduated. His medical career is well known history.

Last year one of the younger Omaha physicians reported malarial infection by a hypodermic syringe. At the time the paper was published we felt the case "not proven." Recently the Public Health Service reported a series of similar cases. It occurs among dope fiends who use one another's syringe. A dope fiend, a victim of malaria using a syringe may aspirate some plasmodium laden blood into the syringe and pass the syringe on to the next one, who without sterilizing the syringe or cleaning out the little blood it contains from the previous injection, gives himself an injection of dope plus malarial germs it contains.

A letter from Dr. George H. Simmons, Hollywood-By-The Sea, Florida, says: "I want to congratulate you on the *Journal* you are issuing. Clean from cover to cover, including of course the advertising pages. What a wonderful change has taken place during the last thirty years in medical journalism in the United States." Very few of Dr. Simmons' medical contemporaries in Nebraska are left. It may be well to restate that Dr. Simmons was a practitioner in Lincoln in the nineties, that in the later nineties he was Secretary of the Nebraska State Medical Society and founded the *Western Medical Review*. In 1898 he was elected editor of the *Journal of the American Medical Association* and continued in that position for twenty-five years. When he became editor the circulation of the *Journal* was something like 8,000; when he retired the circulation was upward of 80,000. To him, more than to any other man, is due the reorganization of the American Medical Association on the county unit basis in 1901.

The State Department of Health in its monthly letter says: "Detecting a source of infection like typhoid is sometimes very difficult, but shortcuts, like invariably blaming the water supply, do not pay. Over-emphasis on water as a source misled activity from early preventive measures, resulting in additional cases of typhoid fever during the past year. Investigation revealed quite a number of the cases were believed due to waterborne infection but, ultimately, definitely traceable to carriers and some to infection in the home because of improper hygienic regime, both personal and disinfection of discharge from patients. Immediately upon suspicion of typhoid, specific instruction should be imparted regarding the most scrupulous care to prevent transmission of the disease to others. While water contaminated with typhoid bacilli may be a means of transmitting the infection, it should be borne in mind that the source of these germs is the typhoid patient or "carrier." Water supplies—public and private — must, of course, be constantly safe-guarded so as to prevent them from being the means of transmitting not only typhoid fever but other intestinal diseases."

The Roosevelt Ball to raise money to aid in the fight against infantile paralysis is a magnificent conception and no doubt will result in the piling up of a fund that will be worth while. We uphold the funds to fight tuberculosis and the Red Cross funds to give aid to the needy in mass tragedies and of course we all will support any movement toward alleviating the condition of those afflicted with poliomyelitis.

State regulations for medicinal liquor licenses have been set up by the attorney general's office to meet a situation caused by repeal of the eighteenth amendment. Under the new method, a legitimate user—whether druggist, physician, dentist, religious order or industry—will file an affidavit with the governor saying that the alcohol will be used for proper purposes such as the compounding of medicines not for beverage purposes. The governor then will issue the permit. Dentists will be limited arbitrarily to 2 gallons and doctors to 5 gallons a year as under the old rule, the attorney general's office said, while reasonable limits probably will be established for other persons as circumstances warrant. The licensees will be required to keep records of the disposal of their portions and file them with county clerks.—Lincoln State Journal.

HIGHER CARBOHYDRATE DIET METHOD IN DIABETES MELLITUS: ANALYSIS OF ONE THOUSAND AND FIVE CASES

During the past seven years P. A. Gray and W. D. Sansum, Santa Barbara, Calif. (*Journal A. M. A.*, May 20, 1933), observed the effects of diets which, so far as their carbohydrate content is concerned, are more liberal than the so-called classic or strict diabetic diets. Their material consists of 1,055 cases of glycosuria admitted to the metabolic division of their hospitals. Of these patients, 1,005 were considered to have true diabetes mellitus, 31 potential diabetes and 7 renal glycosuria. The material is equally divided between the sexes, there being 504 men and 501 women. A higher carbohydrate diet does not mean an unlimited or "free choice" diet such as Stolte has recently advocated. The average type of diet that has been used during the period covered by this study in each type of diabetes has been that the number of grams of carbohydrate has averaged slightly more than twice that of fat used. The tendency during the last few years has been to use from 3 to 4 Gm. of carbohydrate per gram of fat without any change in the calory-to-kilogram ratio. The adults have received 30 or less calories per kilogram except when such complications as extreme malnutrition, tuberculosis or hyperthyroidism have been present. With children, the diet has been more liberal. In the preparation of the diets, all staple foods except cane sugar, honey, and foods sweetened with any of these are employed. Aside from this restriction, the patient may select what particular foods he likes within the limitations imposed by the diet formula. Fruits, vegetables, milk, eggs, meat, bacon, bread, cereals, butter, cream and salad dressings constitute the diet. The authors believe that the seven-year period covered by their study is a sufficient length of time in which to evaluate adequately the usefulness of the higher carbohydrate diets. All patients included in this study received such diets throughout their period of treatment. Seventy were under continuous observation for the entire seven years, 16 for six years, 43 for five years, 57 for four years, 97 for three years, 115 for two years, 177 for one year, and 430 for less than one year. No case was included which did not receive treatment for at least one week. The authors' records are sufficiently complete on seventy of the original patients who received the higher carbohydrate diet in 1925 to justify critical analysis. They present a record of the age, weight, diet and insulin dose of each of these patients when they first became stabilized on the higher carbohydrate diet and the corresponding data when last examined. An improvement in tolerance as measured by a lower insulin dosage, an increased diet, or both, has been frequent among these patients. In forty of these cases (51.7 per cent) there has been a reduction in the insulin dose either on the same diet or on one of greater caloric value. One patient has been able to increase his diet on the same insulin dosage, and another, who did not receive insulin, has been able to increase his diet without insulin. In ten cases (14.3 per cent) the insulin dosage today is higher than it was at the beginning of the period of treatment, but the diets are also greater. Two patients (2.8 per cent) have had to increase their insulin dosage, either on the same diet which they took in 1925 or on one of lower caloric value. Fourteen cases (20 per cent) require less insulin than they did five years or more ago, but at the same time the daily caloric intake is lower. The reductions in diet and in insulin dosage are not parallel in all cases. Of the ninety-five patients (of the whole series) who died, arteriosclerosis was the chief single cause. The incidence of arteriosclerosis seemed to be more closely related to the age of the patient than to the duration of the diabetes.

USE OF DIGITALIS OTHER THAN IN TREATMENT OF CARDIAC DECOMPENSATION

Henry A. Christian, Boston (*Journal A. M. A.*, March 18, 1933), states that rest and digitalis is the practically universally instigated therapeutic management of cardiac insufficiency. In a large percentage of patients so treated, symptoms and signs of cardiac insufficiency largely disappear. With return to a greater degree of physical activity, sooner or later a return of the same symptoms and signs is to be expected. Clinical experience indicates that, if to such patients a daily ration of digitalis, short of toxic effects, is given, this return of evidences of cardiac insufficiency will be delayed. Consequently it has become a quite general practice to give such patients digitalis continuously in an amount just short of toxicity, the proper amount approximating 0.15 to 0.25 Gm. daily. Now if digitalis. thus used as a continuation treatment, is helpful in cardiac insufficiency it is reasonable to suppose that if it is given prior to the development of symptoms and signs of cardiac insufficiency, development of these symptoms and signs might be delayed. The author's clinical experience is in accord with this idea, and so he has come to give digitalis in this way to patients in whom he can detect evidences of cardiac disease, particularly cardiac enlargement. It does seem as if cardiac enlargement is retarded and that these patients are capable of greater activity without having symptoms or signs of cardiac insufficiency than are patients otherwise similar not receiving digitalis. Clinical experience points to a particular usefulness of digitalis in persons past middle life (40 to 50), with cardiac enlargement without valve lesions, not yet having symptoms or signs of cardiac decompensation. Competent observers believe that in elderly people with no evidence of cardiac enlargement but in whom circulatory efficiency is lessening, digitalis increases heart efficiency, and here digitalis possibly may be said to have a definitely "tonic" effect, presumably increasing the hydration, which has decreased in the aging process.

The surgeon who announced to a patient that it would be necessary to amputate his left hand and remove his stomach following an automobile accident is said to have been answered by the patient with: "Well, good-bye, paw, good-bye, maw."—Selected.

OBITUARY

Arthur D. Dunn, Omaha; native of Meadville, Pa.; Rush Medical College, 1902; early education: A. B., Alleghany College, 1896, Ph. D., University of Chicago, coincident with his medical degree from Rush in 1892; house physician at Cook County hospital; private assistant to Dr. John B. Murphy; coming to Omaha in 1907 he was the earliest exponent of real scientific medicine in the Missouri Valley; perhaps the foremost clinician in the middle west; coroner's physician in Omaha for one and one-half years soon after coming to Omaha, in which work he practically introduced the value of autopsies to the members of the profession of the city of Omaha, many of whom today attest to the value of his clinical observations made at these autopsies; professor of medicine Creighton University College of Medicine from 1908 to 1922; member of the Advisory Board and vice dean Creighton Medical College, 1914-1922; professor of Experimental Medicine and chairman of the Department of Clinical Research, Nebraska University College of Medicine, from 1924 to the time of his death.

DR. A. D. DUNN

Dr. Dunn was elected delegate from the Nebraska State Medical Association to the American Medical Association in 1921 and served some years in this capacity where his aptitude and ability was soon recognized, and during his term in the House of Delegates, 1922-1928; he served on various important committees where his counsel was ever good and timely and his zeal for this type of work was abounding and many of his splendid ideas were reflected in the report of committees on which he served.

Dr. Dunn was a member of the Council on Medical Education and as such member was active in making the first hospital survey made of Nebraska hospitals.

He was a member of the Association of American Physicians, The American College of Physicians, The American Medical Association, The Central Society for Clinical Research and the State Medical Association. He was past president of the Missouri Valley Medical Society and president-elect of the Omaha-Mid-West Clinical Society.

He did postgraduate work in Vienna in 1904; in London and Vienna in 1910 and in Zurich in 1913.

He was much in demand as a speaker at medical society meetings, county, state and regional. As a consultant he had a repute second to none in this vast region. He published some fifty scientific papers and addresses.

Originally a student for university life in the romance languages, he suddenly switched to medicine and became one of its great teachers and practitioners.

Death from a heart affection came to Dr. Dunn, early in the morning of January 8, 1934, aged about sixty-two years. A widow and son survive.

The following resolutions were offered for publication:

The University of Nebraska College of Medicine has suffered an irreparable loss in the passing of Arthur D. Dunn.

Doctor Dunn was professor and chairman in the Department of Clinical Research. Because of his mastery of the fundamentals in medicine, and his wide clinical experience, his stimulating influence was continuously present among his confreres and the entire student body.

For more than a quarter of a century Doctor Dunn has been an oustanding figure, not only in local circles but in American medicine; and, because of the high esteem in which he was held by his colleagues throughout the nation, he reflected this esteem upon the Faculty of the University of Nebraska College of Medicine, of which he was a member.

With these thoughts in mind be it resolved:

That the Faculty extends its sincere sympathy to the family; that a copy of these resolutions be incorporated in the records of the proceedings of this Faculty; and that a copy be forwarded to the family.

Rodney W. Bliss,
Alfred J. Brown,
J. D. McCarthy.

Leroy Crummer, Los Angeles, Calif.; native of Illinois; Northwestern Medical School, Chicago, 1896; practitioner in Omaha for thirty years; successively professor of therapeutics, professor of clinical medicine, chairman of the department of clinical medicine and professor emeritus of the University of Nebraska College of Medicine; captain in the medical corps during the World war; a bibliophile of early medical books of which he accumulated a vast library, later, on leaving Omaha, presenting them to the University of Michigan where he received his literary education; honorary doctor of letters, University of Michigan; professor of medical history, University of California Medical School; formerly an honored member Nebraska State Medical Association; son of the late distinguished Dr. B. F. Crummer, Omaha, who was president, 1903-04, Nebraska State Medical Association; died January 1, 1934, of a chronic heart lesion, aged sixty-two years. A widow survives.

Nathan Blakeley, Lincoln, Nebr.; Creighton University School of Medicine, Omaha, 1910; for twenty years a .practitioner at Auburn, and two years at Wahoo, before retiring to Lincoln on account of ill health; specially interested in obstetrics and gynecology; member, Nebraska State Medical Association; died December 29, 1933, aged sixty-four years. A widow survives.

Albon E. Bartoo, Dansville, N. Y.; University of Buffalo School of Medicine, 1889; practitioner at Westcott about 1890 and at Arcadia for many years until ill health forced him to retire to Pomona, Florida, where he lived for some years, removing to Dansville, N. Y., recently; was examining physician at a health resort; representative from Valley county in the Nebraska legislature, two terms, 1903-1905; sometime member, Nebraska State Medical Association; died November 29, 1933, from a heart lesion, aged about seventy-three years.

Norman T. Johnston, Kearney, Nebr.; University of Western Ontario Medical School, London, Ont., 1902; for a number of years practicing physician at Upland; former active and honored member, Nebraska State Medical Association, of which he was sometime vice president; in recent years carried away by the Abrams cult, of which national organization publication he was editor at the time of his death; died January 13, 1934, aged about fifty-five years.

AUXILIARY NEWS NOTES

The members of the Lancaster County Medical Society entertained their wives on the evening of January 16. Moving pictures were followed by an informal evening and refreshments.

In accordance with the year's program the Public Relations Committee has provided several speakers on public health for other organizations. Dr. Roy Whitham and Dr. Allen Campbell addressed the P. T. A. Societies. Dr. Ernest Hancock spoke also to the Junior League.

* * * * * *

The Tri-County Medical Auxiliary held a Christmas party at the home of Mrs. W. D. McGrath, Grand Island, recently. During part of the afternoon the ladies sewed for charity and later a musical program was presented. A Christmas tea was served with decorations and appointments suggestive of the occasion.

* * * * * *

A nursery school has been started at Falls City, Nebr., under the sponsorship of the Richardson County Medical Auxiliary, and is running smoothly with forty-two children between the ages of two and five years registered. This project is made possible for a period of eight weeks by CWA funds, and will operate five days a week. The children are put through a regular course of instruction each day. This consists of training which will be beneficial to them in their homes, and advantageous for themselves. A noon meal and an afternoon nap is incorporated into the program of the day. All children attending will be given close physical supervision by the nurse, and this service includes visits to the homes. Children will be admitted where, because of economic conditions, they cannot be given proper training in the homes, or where the mothers are employed through the day. The Medical Auxiliary has been working on the project for about two weeks, and have received the cooperation of the state CWA authorities.

TUBERCULOSIS ABSTRACTS

The hope of controlling tuberculosis depends largely on our ability to discover cases as early as possible, for the longer a bacillus carrier remains unaware of, or indifferent to, the danger to which he is exposing others, the greater is the number of potential new cases. The search for cases of tuberculosis demands aggressive action on the part of doctors and health workers for many persons with tuberculosis do not voluntarily seek medical advice and others tend to conceal their disease. Two studies recently made in Philadelphia bring out the value of definite case-finding projects and also some of the difficulties. Abstracts from these studies published in the American Review of Tuberculosis follow.

EXAMING CONTACTS OF TUBERCULOSIS CASES

Sir Robert Philip in 1887 first emphasized the necessity of examining household contacts of tuberculous patients for the purpose of finding early cases and putting them under care so that they may recover and not in turn infect others. Home follow-up work is costly in money and energy, but the results are considered worth the cost. How efficient is it? A health and hospital survey in Philadelphia some years ago showed that only 30 per cent of household contacts of tuberculosis patients of chest clinics were actually examined; an "average county" had examined 20 per cent, and a health demonstration city had examined 60 per cent.

ANALYSIS OF FOLLOW-UP WORK

Analysis of contact work was made of the clinic patients of Henry Phipps Institute diagnosed tuberculous for the first time for a period of 18 months. These patients are designated as the "original tuberculosis patient." The homes of all were visited. A household contact was considered to be any person living in a dwelling and eating at the same table at the date of diagnosis of the original patient.

The family records of the 182 original tuberculosis patients were reviewed one year after the date of diagnosis and the records therefore represent the year's attempt to secure the examination of contacts. It was found that there were 647 contacts of which 308 or 48 per cent came to the clinic within the year after the date of diagnosis of the original tuberculosis patient.

About two-thirds of the original tuberculosis patients were white and one-third colored. Only 11 of the white group were of native born parentage. Families of 60 of the patients were known to one or more of the relief agencies of the city. Four-fifths were between the ages of 16 and 49. For 27 of the original tuberculosis patients there were no household contacts and for 22 only 1. Further analysis led to the conclusion that "the most complete contact examination work will be possible in districts serving large families with many children, colored families, and families with advanced tuberculosis patients with positive sputum."

REASONS FOR REFUSING EXAMINATION

The reasons why 52 per cent of the contacts did not come to the clinic were studied by interviewing the visiting nurses.

The three obstacles most frequently met in endeavors to secure contact examination are (1) that the contact wishes to be examined hy a private physician or a physician in some clinic he is already attending; (2) that the contact will promise to come to clinic and accept a clinic appointment, but not actually present himself; and (3) that the contact says he feels well and sees no need for examination.

Difficult as it is contact examination is a most important field of tuberculosis work. Of the contacts examined within 12 months of the diagnosis of the first patient, 11.4 per cent were found to be tuberculous, and the diagnoses of 2.3 per cent were undetermined at the end of the 12-month period.

Tuberculosis Clinic and Contact Study, Dorothy E. Wiesner and S. Margaret Smith. February, 1934.

CASE-FINDING WORK AMONG CHILDREN

With the best of contact examination work many cases of tuberculosis elude the attention of the doctor and the health officer. One of the supplementary devices for finding cases is that of examining school children routinely with the tuberculin test and the x-ray. By this method early cases of tuberculosis are found among apparently healthy school children, and by examining contacts in their homes active cases not previously known are discovered. A study of this kind was made recently in Philadelphia to confirm previous observations in the incidence of tuberculous infection as shown by the tuberculin test and of various lesions as shown by x-ray examination.

Additional tuberculin tests made upon children in two schools confirm the conclusion that the incidence of tuberculous infection in Philadelphia is high at the age of 15 years. Of 704 children tested, 566 or 80.4 per cent reacted. No significant difference in the percentage of reactors attributable to sex or race was noted. The percentage of white girls who reacted was somewhat higher than that of white boys, but it differed very little from the percentage of colored girls and boys who had positive reactions.

The authors believe that the percentage of lesions based upon the numher of children tested with tuberculin, rather than upon the number examined by x-ray when negative reactors are excluded, gives a fairly accurate conception of the incidence of tuberculous lesions in presumably healthy children.

LESIONS FOUND

The number of significant lesions (defined in the article) in elementary school children below the age of 12 was small, probably about 0.3 per cent. Significant lesions were found in 1.0 per cent of white boys 12 to 20 years of age and in 2.3 per cent of white girls. Colored children in the younger group showed significant lesions approximately five times as great as in white children. (In the older group the number of colored children examined was too small to be comparable with the number of white children.) The authors feel that preventive work is more needed in the adolescent group than among younger children.

The white children in the survey were mainly first-generation American, in large part of Jewish and Italian stock. One of the schools was situated in a district thickly populated by people in very poor circumstances. Halt of the pupils were colored. The death rate from tuberculosis for a two year period, April 1, 1929 to April 1, 1931 in the area from which one of the schools draws pupils was 284.3 per 100,000 and in the area from which the other school draws pupils, 219.4.

In the summary the authors say:

"Under the conditions of our survey the tuberculin test unfortunately deters many people from giving consent to examination. When determination of the incidence of infection is not considered essential the tuberculin test may be omitted, in order to survey larger numbers cf school children. Some of the children given x-ray and physical examinations will presumably be tuberculin-negative, but this waste may be compensated for by saving the cost of a general application of the tuberculin test to groups presumably in large part tuberculin-positive. School administration and health officers with the aid of parents might devise a plan by which all children could be fully examined.

"The need of prophylactic care for school-children with significant latent lesions is not generally recognized. The value of treatment in open-air classes and preventoria can be determined only by long-continued observation of large groups of children, with accurate diagnoses and adequate controls. Conditions in the schools reported h re have not made possible the collection of information concerning the value of prophylactic care within the school system. Nevertheless, it is reasonable to suppose that measures of established value in arresting clinical tuberculosis will prevent the development of latent into clinical disease if adequately applied to appropriate subjects."

A Further Study of Tuberculosis in Public-School Children, H. W. Hetherington, F. M. McPhedran, H. R. M. Landis and E. L. Opie. February, 1934.

"Hush, little drug store,
Don't you cry,
You'll be a grog shop,
By and by."

THE SOCIETIES

At the annual meeting of the **Scotts Bluff County Medical Society,** December 14, Dr. N. H. Rasmussen of Scottsbluff was elected president; Dr. Ted. Riddell, Scottsbluff, vice president; Dr. J. B. Schrock, Gering, secretary-treasurer; Dr. W. C. Harvey, Gering, delegate.

The **Otoe County Medical Society** met at Nebraska City, January 8. Dr. Adolph Sachs and Dr. B. Carl Russum, Omaha, conducted a heart clinic.

Heart cases are largely psychic (mental) and for that reason physical and mental rest is all-important, Dr. Sachs told doctors.

When the patient finds it difficult to sleep, a sedative, warm bath—anything that will bring on sleep—is valuable. He said heart attacks come suddenly, leave just as suddenly. Their duration may be for a few minutes or last for hours.

Dr. Sachs conducted a clinic and examined cardiac patients brought in by Dr. C. G. Zimmerer, Dr. T. L. Weekes, Nebraska City, and Dr. A. R. Wanamaker of Hamburg, Ia. One patient examined was a former athlete. Dr. Sachs discredited athletics as being a cause of his heart trouble.

"The idea that tremendous hearts come from extreme physical exercise of athletes is foolish," he declared.

Dr. Carl Russum continued the talk on cardiac trouble and his entire lecture was illustrated with slides. He outlined the evolution of rheumatism and its connection with heart trouble. He spoke of rheumatic heart disease, infectious types of heart disease, coronary thrombosis and coronary sclerosis.

The **Lancaster County Medical Society** held its annual business meeting on December 20, and the following officers and representatives were elected:

Dr. W. O. Colburn, president; Dr. F. L. Rogers, vice president; Dr. E. S. Wegner, secretary; Dr. C. F. Andrews, treasurer; Dr. R. O. Hummel, censor; Dr. H. W. Orr, historian; Dr. J. E. M. Thomson, delegate to annual meeting; Dr. B. F. Williams, alternate.

A regular meeting of the **Lancaster County Medical Society** was held in the society rooms, Lincoln, January 2.

This being the first meeting under the new administration, Dr. W. O. Colburn, president, took occasion to thank the society for the honor conferred upon him and made fitting remarks regarding the progress of the organization. He also asked for the cooperation of every individual member in making the following year one of definite progress.

Dr. E. E. Angle presented a clinical case report of hydronephrosis of the left kidney caused by congenital diverticulum of the bladder. Removal of the diverticulum did not relieve the hydronephrosis and the kidney had to be removed later. Pus in urine cleared up after nephrectomy as did the pain in the side of which the patient had complained for years.

The first paper of the evening was read by Dr. Miles J. Breuer under the title "The Psychic Factor in the Etiology of Tuberculosis." Dr. Breuer's presentation was a philosophical approach suggesting or emphasizing psychic factors in their relation to tuberculosis. Dr. E. B. Reed discussed the paper.

The second paper of the evening was presented jointly by Drs. R. A. Warner and Grace Loveland. Their subject was: "Rats—A Satisfactory Technique for Early Pregnancy Tests." The doctors prepared a demonstration of freshly disected animals to show characteristic reactions. This paper was discussed by Drs. Morgan, Harvey and Hansen.

—E. S. Wegner, Sec'y.

The **Dawson County Medical Society** held its annual meeting at Gothenburg, January 8, following a Rocky Mountain sheep dinner. The sheep was the victim of Dr. A. E. Reeves' gun on a hunting trip to Wyoming.

Dr. Mason Lathrop, Wahoo, gave a paper, "Decentralization of Medicine."

Dr. A. W. Anderson, Lexington, was elected president; Dr. E. C. Stevenson, Gothenburg, vice president; Dr. V. D. Norall, Lexington, secretary-treasurer; Dr. E. C. Stevenson, delegate.

—Victor D. Norall, Sec'y.

The **Madison Six County Medical Society** met in the basement of the Presbyterian church, Norfolk, January 16. Following a dinner to 55 physicians and their ladies, the following program was carried out:

"600,000 Volt X-ray Therapy," Dr. Roscoe L. Smith, Lincoln.

"Diseases of the Thyroid Gland," Dr. Clayton F. Andrews, Lincoln.

"Pneumonia," Dr. Geo. W. Covey, Lincoln.

These papers will be published in the Journal.

Dr. E. L. Brush, councilor, talked on the action of the council in providing for the set-up of Emergency Federal Relief money for medical care of unemployed indigent poor, which was adopted by the councilors the night before this meeting occurred.

Members of the **Seward County Medical Society** met at the Windsor hotel Wednesday evening for their annual meeting and election of officers. Dr. Lloyd Ragan was named president; Dr. J. E. Meisenbach of Staplehurst, vice president; and Dr. C. F. Hille of Beaver Crossing was elected secretary-treasurer.

HUMAN INTEREST TALES

Dr. and Mrs. Charles Lucas, Shelton, spent a month in California.

Dr. Victor E. Levine, Omaha, spent the holidays in New York City.

Dr. and Mrs. J. N. Stoops, Scottsbluff, drove to Denver early in January.

Dr. R. H. Lodor, Syracuse, has become president of the local Community club.

Dr. and Mrs. W. R. Talboy, Newcastle, have gone to Pasadena for the winter.

Dr. P. J. Flory, Pawnee City, has gone to Tucson, for the benefit of his health.

Dr. and Mrs. Homer Davis, Genoa, visited at Alberquerque, N. M., in December.

Dr. Max W. Flothow and Mrs. Myrtle Strehlow, Omaha, were married recently.

Dr. W. E. Nowers, Kenesaw, spent the holidays with his family at Los Angeles.

Dr. H. M. Hepperlin, Beatrice, has been ill for some weeks, but is able to sit up.

Dr. H. E. Potter and family, Fairbury, visited in Caldwell, Ida., during the holidays.

Dr. F. O. Beck was elected president of the staff of the Lord Lister hospital recently.

Dr. and Mrs. E. M. Farquhar, Minatare, spent a month in California, mostly at Long Beach.

Dr. J. R. Taylor and family, Sidney, visited relatives in North Carolina, during the holidays.

Dr. Herbert Davis has been appointed surgeon to the Omaha and Council Bluffs Street Railway Co.

Dr. F. W. Heagey, Omaha, was reelected president of the Council of Social Agencies of the Y. W. C. A.

Dr. George D. Conwell, formerly of McCook, has become associated with Dr. A. N. Howley, Norfolk.

Dr. and Mrs. R. C. Talbot, Broken Bow, celebrated their sixty-fourth wedding anniversary on Christmas day.

pp. 73-80 missing.
Last incomplete

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

'ol. XIX — Norfolk, Nebraska, March, 1934 — No. 3

CONTENTS

Page
Prostatic Resection, Arbor D. Munger, M. D. 81
Some Problems of the Newborn the First Few Days of Life, Herman M. Jahr, M. D. 86
Free Full-Thickness Skin Transplant, Robert D. Schrock, M. D., and Herman F. Johnson, M. D. 91
Six Hundred Kilovolt Radiation, Roscoe L. Smith, M. D. 94
Etiological Viewpoint in Diagnosis of Heart Disease, B. Carl Russum, M. D. 97
The Use of Blood Serum in Pregnancy Tests, Harley E. Anderson, B. Sc., M. D. 98
Allergic Manifestations of the Skin, L. J. Owen, M. D. 101
Clinical Pathological Case Reports, Floyd L. Rogers, M. D., and J. Marshall Neely, M. D. 103
Councilor Annual Meeting 104
EDITORIAL—
A Composite on Membership in Medical Organizations 110
Governmental Regulation or Governmental Medicine—Which? 111
Making Motherhood Safe for Mothers 112
How to Cite References: Attention Authors! 113
Granuloma Coccidioides: Further Observations on Use of Antimony and Potassium Tartrate and Roentgen Rays in Treatment 113
Immediate Treatment of Compound Fractures: The Albee Bone Graft and the Winnett Orr Method of Postoperative Care 113
A Survey on Cretinism in the United States 114
Corn Meal As You Like It 114
Editorial Paragraphs 115
Obituary 116
County Society Reactions to Federal Emergency Relief Funds 116
Tuberculosis Abstracts 117
The Nebraska Radiographers Society 118
Auxiliary News Notes 118
Health Behavior 118
The Societies 119
Human Interest Tales 119

PROSTATIC RESECTION

ARBOR D. MUNGER, M. D.,
Attending Genito-Urinary Surgeon, Lincoln General Hospital,
Lincoln, Nebraska.

)uring the last fifteen years we have seen the gress of radical surgery of the prostate placed as nearly a perfect plane as seems humanly sible, yet, withal the patient and all too frentnly the physician is pervaded with a relucce to accept prostatic surgery until the risk is great as possible, at which time the attie of the patient is usually expressed by a sort 'atalastic philosophy—relieve me of my misery allow me to die in the attempt. Fortunately he credit of the urologist, mortality has bee so negligible a factor that a justifiable pride aken in our statistics. And while it would n in order to let well enough alone, yet it is historical record since the first recognition of prostatic obstruction evil that the ideal meth- of relieving such an obstructive process would be through the natural channels to the avoidance insofar as possible of any cutting operation. That this ideal now has been largely achieved there can be no doubt.

Transurethral removal of prostatic obstructions is not so revolutionary in its thought as it is in its present day application through the perfection of technical instruments and the adoption of proper electrical energy to do the work.

The brilliant observations of Caulk(1) that a resorption transformation of the obstructing process takes place after proper canalization, gave a renewed impetus to transurethral work. At the Boston meeting of the American Urological Association in 1926, Collings(2) reported a method of removal of minor obstructions at the bladder neck by the use of an electrotome inserted through the McCarthy Panendoscope. However, since the current delivered at the electrode was cutting in type and not coagulating, bleeding could not be adequately controlled. In 1927, Stern(3)(4) devised the forerunner of our present-day resectoscope, but the same disadvantages were apparent, i. e., lack of adequate control of bleeding, causing its use to be abandoned. T. M. Davis(5), however, modified and improved this instrument, enlarging the aperture, enlarging the cutting loop and equipping it so that a coagulating current could be passed through the electrode for control of bleeding. He subsequently submitted a most fascinating report before the American Urological Association on more than 200 cases. The ingenuity of McCarthy(6) soon placed before the urologists a new visual electrotome possessing merit superior to any which had been produced. Indeed this instrument has met with such favor that it has almost completely replaced all other types of instruments.

With this instrument excellent "canalization" of the obstruction is obtained and may be even carried to the extreme of almost complete "excavation", if desired. Proper "canalization", however, to the extent of restoring the urethra to its normal calibre is the goal sought. It has long been recognized that an obstructing prostate gland will materially subside in size following suprapubic cystotomy for drainage. This comes about through relief of the intra-capsular tension. This has been amply demonstrated by Caulk. Randall(7) has pointed out that intra-capsular tension is a more important factor in the production of prostatic obstruction than is the increased size of the gland and asks, "is it not better to subject an old man to minor surgical procedure rather than to actual prostatectomy?" Without doubt this question has been so satisfactorily answered in the affirmative that we now see an increasing large number of urologists relieving prostatic obstructions transurethrally in an ever increasing percentage of cases. It was aptly stated by McCarthy(8) about three years ago, "in more senses than one, the prostate is at the cross-road"—since which time prostatic surgery has traveled well along the road away from the accepted and orthodox surgical custom. Indeed, so far has it traveled that most urologists today are doing the larger percent of their prostatic surgery transurethrally with an ever increasing number beginning to count a radical prostatectomy among the surgical rarities.

Transurethral resection of the prostate is here to stay. It has proven its worth and I do not believe it would be heretic to predict that within five, or at the most ten years, radical surgery for relief of prostatic obstruction will be of historical interest only.

Naturally, such a procedure as this should achieve its greatest usefulness as a preventative surgical measure. The prevention of progressive prostatism with its attendant cardio-vascular-renal derangement should be the quest of every practitioner. The early syndrome of prostatic obstruction, characterized by nocturia, difficulty in starting and stopping the stream, diminution in force and dribbling would be the ideal time to institute a resection procedure. At this time the obstruction is small and resection would be attended with little or no danger, the residual urine readily relieved and progressive prostatism with its coincident impoverishment of the patient's health stopped.

It should not be forgotten, however, that the prostatic with his lowered kidney function, elevated blood chemistry and septic bladder, must receive the same careful preoperative rehabilitation which has so greatly lessened the mortality in radical prostatic surgery. To do less than this would be unfair to the patient as well as unfair to any procedure instituted to relieve the obstruction. Decompression of the bladder by indwelling catheter, restoration of the kidney function to its optimum capacity, reduction of the blood nitrogen content to a safe level and careful summation of the patient's general physical condition are as necessary essentials as in radical prostatic surgery. The resection is carried out under sacral block or a low spinal anesthesia. The patient is placed in the usual cystoscopic position, the indifferent electrode from the power machine is placed under the buttocks and the usual minor sterile draping placed around the field. A large sound is introduced to locate any obstruction and to temporarily straighten out the prostatic urethra, thus facilitating the introduction of the resectoscope. The resecting instrument is introduced. The bladder is irrigated until clear. The lights are adjusted and the prostatic field carefully studied anatomically. The patient is ready for resection, and the loop placed over the projecting portion of the prostate at the point the operator desires to begin his work. The loop works on a ratchet which describes a circle of 180 degrees, allowing the removal of a section one inch long and one-third to one-quarter of an inch deep. As many pieces can be removed as one finds necessary to relieve the obstruction. Some workers are content with only canalizing the obstructing portion, while others do almost a complete excavation of he prostatic tissue. The type and location of the bstruction with consideration of the patient's eneral picture are criteria upon which the extent f the resection must be placed. Care must be iven throughout the procedure to control all purting vessels to the end that when the work s completed the distending medium will be clear r at the most only faintly pink tinged. An inlwelling catheter is inserted and allowed to renain three or four days. After the removal norual voiding is resumed, slightly difficult at first, ut rapidly improving during the next few days. The inordinately striking thing about this procedure is the absenie of physical disturbance. The patient passes through this procedure with relatively no more upset than from an ordinary cystoscopy. There is no shock and they rarely miss a meal.

The morbidity is certainly decreased and there is a rapid restoration of urinary function. Following the removal of the obstruction the patient remains in the hospital only a few days in comparison with several weeks necessary following radical prostatectomy.

Transurethral resection is particularly useful in relieving the bladder symptoms which accompany carcinoma of the prostate. The urethral lumen can be kept patent and the patient comfortable.

With the possible exception of a very occasional grade 4 enlargement of a very vascular nature, or the intrusion too large to allow engagement of the resection loop over it, the writer institutes this procedure in all cases as they come. It is definitely evident that as the individual operator progresses along the pathway of resection work, his technical ingenuity and dexterity increases proportionately and he finds himself progressively enlarging the scope and type of cases being subjected to resection. From the operator's standpoint it is a tiring procedure, calling for the highest degree of skillful technique, but easy on the patient in contradistinction to the radical removal of the prostate which, as a rule, is easy on the operator and not infrequently disturbing to the patient.

The writer desires to present here certain observations and statistical resume from his experience in one hundred consecutive cases of resection. The age incidence has ranged from 41 to 86 years, with an average incidence of 72 years. In this series of cases the following types of obstruction are noted:

Middle and laterals	52
Middle lobe	18
Median bar	14
Vesical neck contracture	4
Recurrent nodules following former prostatectomy	1
Resection following former cautery punch	2
Resection for persistent suprapubic sinus following partial prostatectomy	2
Malignancies of prostate (Carcinoma 6 Sarcoma 1)	7
Repeat resections	16

It will be noted that by far the greater preponderance of obstructing lesions are those wherein the middle as well as lateral lobes are enlarged. Such lesions have varied from very small middle lobe intrusions with small or moderate hypertrophy of the lateral lobes to very large middle lobes with markedly enlarged and elongated lateral lobes. It was distinctly in this preponderant group that most of the technical difficulties were encountered which lent such a discouraging word to the universal applicability of the procedure in earlier writings. Persistence and technical refinement, however, have overcome the earlier difficulties therein encountered. The tabulation shows there have been 16 repeat resections. These repeat resections are for the most part among the first 25 cases resected and are of the middle and lateral lobe group with the exception of one repeat resection of carcinoma of the prostate. That these repeat resections have occurred is mainly due to lack of sufficient technical experience during the first group of 25 cases—inadvertant in some and done with deliberation in others. The inadvertant cases can only be set down as failure to recognize properly the full extent of the obstructing process or of insufficiently resecting the lateral lobes which when after losing their support by resection of the middle lobe would collapse across the urethra resulting in a mechanical obstruction more firm than before resection. Then again, leaving a thin flap of the inferior border of a middle lobe would, when the bladder filled, float forward across the vesical orifice in the capacity of a ball valve, resulting in very obstinate obstruction. A further difficulty necessitating re-resection was the failure to recognize sufficiently the definite part an intruding anterior lobe can play in the obstructive drama. Experience on one case which had to be resected on three different occasions taught that no matter how well the laterals and middle lobes may be excavated, the intruding anterior lobe, where present, must likewise be cleanly resected. Among that small group of cases wherein re-resection has been deliberately instituted, it has been done because of a desire not to place too much burden upon a poor risk patient at one sitting, or in a patient with a decidedly large prostate to keep the resection within the bounds of reason at one time.

While the average resection in the average case is not attended with appreciable upset of the patient's physical economy, yet in the poor risk he will withstand far better two or three short sittings than one prolonged procedure. I believe this is an essential principle of safety which cannot be disregarded without occasional disaster. Most of the middle lobe cases as outlined in the tabulation fall into the simpler class for resection purposes, and of these little need be said.

The median bars form a very definite and very interesting pathological entity. These are usually found among the less mature patients and not infrequently present an obstructive history over a long period of time. Some of these unquestionably are congenital in origin while others assumably are the fibrotic end result of a long standing prostatitis. Likewise, the vesical neck contractures, fully as mean in their obstructive picture, are the sclerotic product of a long standing prostatic infection.

With the exception of the malignancies, the other types of cases are self explanatory.

The malignancies form a very interesting group. Not, of course, is resection of such lesions curative, but certainly the palliative comfort achieved is worth all the trouble. Experience in the past has for the most part taught that no matter what one did for such cases, the end result was always the same, and what an agonizing end. Radical surgery and radical surgery with all types of radiant therapy has had its proponents and opponents. The more conservative have resorted to permanent suprapubic drainage to allay the dire distress, and truly this procedure has added materially to the tenure of life of these patients and with comfort. Resection does all that anything heretofore could possibly do, and does it gracefully. It is to be hoped, for the future at least in the earlier cases, that resection in conjunction with the now extant 600 K. V. deep x-ray therapy in use in the Lincoln General hospital, as adjunct treatment, may be a progressive step in the solution of the problem. At least the results will be worthy of record.

There are several outstanding questions which the average physician is desirous of knowing about. "How about bleeding?" is usually the first question asked of the resectionist. Bleeding at the time of resection is usually a negligible factor, always under control as desired. However, contrary to former practice wherein an assiduous attempt was made to keep the operative field free of bleeding at all times, the experienced resectionist now relatively disregards oozing during his work unless, of course, it becomes inordinate. Further, where it was formerly decreed that the patient must leave the table without even so much as a pink tinge in the urine, now the reverse is true. And for the following reasons. Complete control of all bleeding means excessive coagulation of tissues, and while it appears ideal primarily, yet excessively coagulated tissue is devitalized tissue and such devitalized tissue will of necessity slough in a few days, thus permitting delayed bleeding and not infrequently very severe in character. Normal primary bleeding allowed to have its own way will soon cease following the resection with a minimal possibility of delayed hemorrhage. In the last 50 cases there has been but one hemorrhage either primary or delayed of sufficient moment to cause the least concern. In the first half of this series there were five extensive hemorrhages occurring in the hospital. One an 86 year old man within one-half hour following resection, the second and third seven and eight days later respectively, the fourth 10 days post resection, and the fifth on the eighth post resection day. The first, fourth and fifth cases were controlled by suprapubic sections and packing. The second and third cases were controlled by transurethral coagulation of the bleeding points. All of these cases promptly recovered with good functional end results. In each case the bleeding could be explained on the basis of technical inexperience. Also each case could have been controlled by transurethral methods rather than the suprapubic sections instituted in three cases, had the operator then been sufficiently astute. There was one very instructive case of delayed hemorrhage occurring outside the hospital which resulted in death. This gentleman, one of the recalcitrant type of individuals, stubbornly insisted upon leaving the hospital on the fourth day following his resection. No amount of logic, argument or persuasion could convince him the folly thereof. He removed his catheter, left the hospital and journeyed back to Kansas on a bus. On the fifth day following his departure from the hospital he had a severe hemorrhage and died the next day. Whether this patient would or would not have had a hemorrhage had he remained in the hospital can only be conjectured. This death could have been avoided, however, were he where prompt interference could have been instituted. Bleeding is no longer the hazard it formerly was. Increased technical experience in the consummation of a smooth field with increased knowledge in handling the energizing agents has reduced it to a safe minimum indeed.

What about permanancy in the resected prostate? Unquestionably sufficient statistical data has been presented during the last five years to allow the physician now to state with reasonable assurance that a well executed resection compares very favorably at least with a well executed prostatectomy. Both are relative in their permanency. But certainly, even though resection were less permanent than it is proving to be, it would be better to subject any given patient to a repeated resection from time to time rather than one radical prostatectomy. Resection may be tempered to the patient—radical or conservative—in direct keeping with the risk or expectancy, while a prostatectomy is always a prostatectomy.

Manifestly a great many prostatics, one is daily surprised, are vitally interested in "potency". Presumably to those of us north of the Mason and Dixon line this should be a matter of small moment. Practically, however, the question seems to be an issue which must be answered. To the impotent one can only aswer that impotence will prevail. Conversely the patient still fired with ambition can be told that his ambition will not be dampened and in all human probability, his ability will not be lessened.

Of utmost importance is the question of "mortality rate." In this series three deaths have ensued, giving a gross mortality rate of 3%. The first death was the tenth case resected. The case was a fair risk and a comfortably easy resection. His catheter was out and he was voiding normally when on the seventh day he began to complain of increasing difficulty in voiding. A high temperature with chill ensued. Examination revealed a peri-urethral abscess in the perineum, which was opened and drained. He did not do well, however, and died from a blood stream infection. Post mortem revealed an excellently excavated middle lobe obstruction, probably too excellently for he had acquired his abscess apparently from a necrotic slough in the deep urethra.

The second mortality, the patient who returned home and died from hemorrhage, has already been detailed.

The third mortality occurred in a patient 81 years of age. He was without doubt the poorest risk for resection which this entire series has afforded. Completely obstructed, enormous physique, totally helpless as regards the use of his lower extremities, with large ulcerations thereon, and mentally enfeebled. He was preoperatively prepared as best possible, a "canalization" performed through which he emptied his bladder well. He was taken home two weeks following his resection, and about a week lated died by just fading out. Even so, it is felt the "canalization" here was justified. He had only a short time to live at the most, he suffered excruciatingly through inability to void, and a simple canalization, which agreeably did not upset him in the least was done with exceeding comfort to him during his remaining days.

This mortality is higher than it should be and yet it is easily evident that two of these cases present controllable factors which experience has deleted.

There has been no selection of cases in this series. They have been resected just as they came. It is seriously doubted whether this same given series subjected to any method of radical surgery without selection could have the same satisfactory end results with as low a mortality rate.

These cases are quoted fearlessly as a word of caution to the casual instrumenteur. Transurethral resection is not a fool proof procedure, nor should it be indulged in promiscuously. Precision and skill come with practice. The sculptor's tools are only of value in direct proportion to the ability of the artist to handle them. Transurethral resection is the most highly technical and the most highly gratifying operation afforded in the field of urology.

All other cases in this series presented a perfectly normal course.

CONCLUSIONS

1. In all types of prostatic obstructions except the enormous intrusion or the very vascular type, transurethral resection is the method of choice.

2. Hemorrhage is no longer a hazard of serious moment.

3. Mortality is reduced to a minimum, the morbidity decreased, and the average hospitalization is a matter of days instead of weeks as formerly.

4. The final results following resection are equal, if not superior, to those obtained by prostatectomy.

5. Early prostatic symptoms should now be regarded as sufficiently important signs to detour the patient away from the dreaded road of progressive prostatism to an early resection.

BIBLIOGRAPHY

1. Caulk, J. R. Obstructive Lesions of the Prostate. Influence of Author's Cautery Punch Operation in Decreasing the Necessity for Prostatectomy. Jour. A. M. A., Febr. 8, 1930, XCIV, 375-380.

2. Collings, C. W. A New Method of Electrically

Excising Obstructing Bladder Neck Contractures and Bars. Jour. Urology, 1926, XVI 545.

3. Stern, M. Resection of Obstructions at Vesical Orifice. Jour. A. M. A. 1926, LXXXVII, 1726.

4. Stern, M. Minor Surgery of the Prostate Gland. A New Cystoscopic Instrument Employing a Cutting Current Capable of Operation in a Water Medium. Read before N. Y. Academy of Medicine, Jan. 20, 1926.

5. Davis, T. M. Prostatic Operation. Prospects of the Patient with Prostatic Disease vs. Resection. Jour. A. M. A., XCVII, 1674-1679. December 12, 1931, 1775-1777.

6. McCarthy, J. F. A New Apparatus for Endoscopic Plastic Surgery of the Prostate, Diathermia and Excision of Vesical Growth. Jour. Urology, 1931, XXVI. 695-696.

7. Randall, A. The Pathology of Prostatic Obstruction. Penn. Med. Jour. July 1931. XXXIII.

SOME PROBLEMS OF THE NEWBORN THE FIRST FEW DAYS OF LIFE*

HERMAN M. JAHR, M. D.,
From Newborn Service, Department of Pediatrics, University of Nebraska College of Medicine,
Omaha, Nebraska.

The first few days of life represent the most hazardous time in the cycle of extra-uterine growth mainly because of the sudden physiological independence which the baby is forced to assume in an environment hitherto unknown. We may philosophize at length at the kindly protectiveness which is meted out by Mother Nature in immunological inheritance and instinctual adaptability with which the living organism comes into its ruthless habitat. We may likewise speculate on the Malthusian doctrine that not all who are born are intended for survival. Nevertheless, as physicians, it remains our duty to do all in our power to save human life. Furthermore, our responsibility to the individual and to society prompts us to help prepare the life that is thus saved for usefulness and happiness.

In this paper, we shall not concern ourselves with ill fated, natural developmental pranks. Rather is it our aim to stimulate thought and discussion on problems of the newborn where the physician, by his vigilance, and skill, is enabled to aid the new arrival on the precarious climb of neo-nativity on to the rough roads of infancy and childhood. The rough spots of the latter period have been cleared considerably though not completely, and we feel a just pride in the control of some of the disease conditions which were the dread of every parent and every physician. Child morbidity and mortality has been reduced beyond the prediction of the most optimistic pediatrician of our preceding generation. Yet progress in the field presently discussed is quite imperceptible. The mortality and the morbidity among the newborn is disadvantageously out of proportion to the progress in other phases of therapeutics and prevention.

My task this morning is to discuss with you some of the problems encountered over a period of nine years on the Newborn service of the Medical College of the University of Nebraska, the last four years, of which, include the nursery service in the University Hospital. I wish here to express my appreciation to Dr. Howard B. Hamilton, the head of our Department of Pediatrics, for assigning this service to me, and also to the Department of Obstetrics for their cooperation in the effort to study our newborn problems as they arise.

MINOR DEVELOPMENTAL ANOMALIES

1. There are many minor deformities with which the newborn makes its appearance, minor in the sense that they are simple of correction, not that they lack in seriousness if not attended to. Mild club foot detected early and treated efficiently leaves little, if any, deformity. Yet, if the child is allowed to nurture this condition, and grow up with it, his whole life may be affected by its crippling effects. Clubbing of the feet in the newborn is one of the most frequent anomalies encountered. It is true that in comparatively few of these babies is deformity marked. Still, it seems that it is the very mildness of the condition that causes these babies to grow up unattended and later have to be subjected to radical surgical procedures. Had the condition been noticed early, perhaps mere massage with intelligent manipulation may have been enough to straighten the foot. In many of our cases where clubbing of the feet was quite marked, over-correction with adhesive strips was frequently sufficient to accomplish excellent results. Some of our cases of severe clubbing, of course, need special orthopedic procedures. What I wish to emphasize, however, is the mild club foot, not recognized by the mother, yet easily picked up by the trained eye of the physician, the case that yields to simple manipulation intelligently advised.

---

*Read before Omaha Mid-West Clinical Society, October 31, 1933.

2. Supernumerary toes or fingers. Any developmental anomaly that can be corrected early with impunity should receive treatment as soon as conditions of the baby allow. Supernumerary phalanges are a distinct handicap to an individual and the earlier attended to the better. Many of these unsightly appendages are attached by only a fold of skin which, if tied firmly, atrophies and the unnecessary organ is thus removed, practically without scar. Where there is a whole joint involved, surgical procedure is advisable, preferably soon after the eighth day. It is neither necessary nor logical to delay the operation "until the child grows up."

3. Tongue tie. Contrary to popular belief, tongue tie is encountered very infrequently as compared with other anatomical anomalies. I have reference of course to a condition where the frenulum is so short that the baby is unable to nurse. In the four years of my nursery service, I had occasion to clip the frenum only twice. Yet our babies are examined from head to foot the first twenty-four hours after delivery and any peculiarity developing subsequently, in appearance or general disposition, is promptly reported and checked.

4. Phimosis. This is probably the most frequent anatomical anomaly in development. The necessity for circumcision is a controversial topic upon which I rather hesitate to argue. However, where there is a tight, adherent prepuce, it is my opinion that less injury is done by the surgical removal of the foreskin than by frequent pulling and pushing of this sensitive mechanism in the attempt to break up the adhesions. If circumcision is indicated, it is best done on, or soon after the eighth day. Only where emergency exists, is one justified to operate earlier than the eighth day. Prior to that time, the clotting time as well as the bleeding time is delayed and trouble is almost imminent.

NUTRITIONAL PROBLEMS

1. Inanition Fever: One of the problems that frequently presents itself, particularly during the first few days of life, is an elevation in temperature with no apparent basis for it. This phenomenon has been much discussed and described as to possible etiological factors. Some have attributed it to mild infection, others to protein absorption, still others to starvation and dehydration. Arguments can be advanced to support each one of these theories. Suffice to say, that the fever does occur in a large number of infants, making its appearance on the second and third day with a temperature ranging from 100 to 104 or 105 degrees F. Nor is the general condition of the infant an index to the incidence or degree of the fever. Some babies who appear perfectly well, may without provocation, develop a fever on the second, third, or fourth day. It was noted that the rise in temperature corresponded uniformly with a drop in weight. Furthermore, the administration of water almost invariably proved efficacious in reducing the temperature within a few hours after its onset.

2. Loss in Weight: Of late, there has been much speculation with regard to the significance of the so-called physiological loss in weight. While one seldom notices any serious consequences from this condition, one cannot but suspect that the term physiological is a misnomer. It is apparently only because of its universal occurrence that this loss in weight in the baby is called physiological. To my knowledge no plausible explanation exists to justify a functional basis for loss in weight in the newly born. The association of this phenomenon with the sudden rise in temperature and its favorable response to fluids prompted the administration of sugar water to all infants born on the service, with most remarkable results. Not only did the incidence of fever decline but, indeed, a high fever, unaccounted for by a definite etiology is usually taken as a sign of failure to administer fluids. I can recall only two cases with a temperature of above 103 that were thought to be a dehydration fever. One infant died two days later and post mortem examination revealed degenerated cystic kidneys. The temperature in this case developed at two days when it rose to 106.8° F. The other baby recovered uneventfully.

The loss in weight is attributed to expulsion of meconium and lack of food. As a matter of fact the meconium thus expelled seldom totals more than 5 ounces. Nor is there any relationship between the quantity of meconium and the weight of the infant. Similarly, the amniotic fluid regurgitated rarely is of noticeable quantity, certainly not sufficient to produce marked changes in weight. Yet, the loss in weight of the newly born, according to statistics, varies between 8 and 10%! And the greater the birth weight, the greater seems to be the loss in actual ounces. To attribute this loss to lack of food intake entirely, one would have to overlook the low basal metabolic rate at this early period which is characterized by 20 to 22 hours a day of sleep and muscular inactivity.

On the other hand, when one considers the large surface area of the small infant with its attendant evaporating facilities, one must conclude that here lies a potent reason for water and weight loss. This phenomenon is the basis of our rationale for sugar water feeding. The concentration is such that the caloric value is the same as milk. The infant is offered two ounces of 17% sugar every four hours, beginning six hours after birth, regardless of whether he obtains anything from the breast. Sugar, besides being a readily utilizable food offers the further advantage of being hygroscopic. Its laxative effects, if it has any, serve the purpose of cleansing out the bowels of mucus and amniotic fluid. It should be observed though that the purging effects of cane sugar has not been called to our attention so far. The results have been uniformly gratifying.

3. Breast Feeding of the Newborn: One may argue that the administration of additional food to the young infant will interfere with nursing and emptying of the breast with consequent failure of breast function. The fallacy of this argument is based on our faulty conception of the physiological capacity of the baby's stomach. It is generally taken for granted that an infant's capacity may be determined by the age in months plus two. A newborn baby, therefore, would have a stomach capacity of two ounces. We have been weighing the infants before and after each nursing and found that some babies would ingest as much as eight ounces at a time. As for the general effect on breast function while actual figures are not available, it is our impression that none of the mothers have shown any evidence of handicap. This is as should be expected because a baby who loses only a small percentage of its weight has more ambition to empty the breast than one who has lost considerable. We have no evidence that sugar water feeding as described interferes in any way at all with the appetite of the newborn infant.

OTHER NURSERY PROBLEMS

1. The Silver Reaction: Edema of the eyelids is quite a common condition though it seldom becomes serious. The eyes are usually swollen shut and a thick muco-purulent discharge is in evidence. Microscopic examination of the stained smear presents a conglomeration of pus cells and epithelial debris with an occasional micro-organism showing secondary infection. The edema is an expression of an irritation from the silver nitrate instilled in the eyes at birth to prevent gonorrheal ophthalmia. A simple uninfected irritation can be relieved by the application of hot boracic and magnesium sulphate packs applied for fifteen minutes out of every hour. The infected eyelids usually require irrigation with a mild antiseptic. We use 20% argyrol instillations which is quite efficacious.

I wish to emphasize two points in dealing with this condition. First, the importance of a microscopic examination of the smear. One examination is not sufficient to rule out the diplococcus of Neisser. While the instillation of silver nitrate at birth is in the vast majority of cases enough to preclude ophthalmia neonatorum one must always bear in mind the exceptional case as well as the possibility of subsequent infection while nursing. It is for this reason that repeated smears of the eye discharges become important. Our rule is to make a smear at the time of the onset of the condition and repeat the procedure daily if there is a little or no improvement.

The second point is the warning in handling of the irritated eyelids. Rough handling of the eyelids means adding injury to irritation which is certain to aggravate the situation. I am ready to concede that the eye is not nearly so sensitive an organ as the novelists describe it, yet, in the eyelid we are dealing with a soft tissue which cannot stand much abuse. In the simple silver nitrate reaction with the muco-purulent discharge, the parts can be kept fairly clean by the boracic acid irrigations twice daily without squeezing the tissues. I am not in favor of hourly irrigations as some authors advise.

2. Swelling of the Breasts: The exact etiology of this rather prevalent condition is unknown. It may be due to pressure in the course of delivery, intra-uterine hormone absorption, or to injury during subsequent handling. Whatever the causative factor, the congestion of the breasts needs no treatment. In fact, it is best not to touch it beyond necessity. The swelling may last several weeks and clear up without complications. I have seen dozens of these, yet in only two instances was suppuration encountered that necessitated incision and drainage. In both cases the mothers had been advised to massage the breasts, in one case with camphor oil, and in the other with a proprietary liniment.

3. Birth Injuries: It is not my object to go into details of these conditions in an academic way. I merely wish to touch on some of the practical points involving immediate handling in order to prevent disuse or deformity.

Brachial Paralysis: This condition is not difficult to diagnose. Though the symptoms vary with the extent of the injury to the brachial plexus, the principle of the treatment remains uniform: to preserve the affected muscles. Thus, whether the nerves are only stretched or whether the nerve sheath is torn, every effort should be made to save the deltoid muscle. Whatever orthopedic procedure may be employed later, the muscles involved must retain their physiological tonus. This is best achieved by wrapping the shoulder and arm in cotton wadding and the sleeve pinned to the sheet with the arm level with the shoulder. Other therapeutic procedures are best carried out beyond the age of two weeks.

Cerebral Hemorrhage: Next to cerebral amentia the results of cerebral hemorrhage offer the most pathetic picture in uselessness of the individual and unhappiness of the family. That this accident at birth is all too frequent in occurrence, no one denies, although statistics of various reports are quite contradictory. They are as low as 5% and as high as 40%. Suffice it to say that the condition occurs quite frequently. The term injury must be used in a wide sense in order not to leave the impression too long adhered to that it is associated with difficult labor. While dystocia is undoubtedly a potent factor in the causation of cerebral hemorrhage, it is by no means the only factor. To justify this assertion let me remind you that cerebral hemorrhage of the newly born is quite common in cases of normal labor with no malposition and with no instrumentation. Nor is it a rarity in Cesarian delivery. The point I wish to emphasize in this connection is that normal labor does not rule out the possibility of cerebral hemorrhage. The term cerebral injury must, therefore, be applied to chemical and toxic products as well as to mechanical instrumentation and antiquated methods employed in resuscitation of the newcomer. One can account for cerebral hemorrhage with comparative simplicity. We must remember the condition of the circulatory apparatus at birth. The blood vessels are friable, the clotting time is prolonged, ten to sixteen minutes (adults, three minutes). The bleeding time may be as long as twenty-five minutes in the newborn. In the light of this situation it is easy to see the possibility and consequences of cerebral hemorrhage in this period of life.

We may divide this condition into three clinical types from the standpoint of symptomatology and prognosis:

a. The massive hemorrhage. Here we are dealing with a large accumulation of blood in the brain with pouring out of spinal fluid due to foreign substance irritation of the free sanguinous fluid and probably also due to hydrostatic pressure of this fluid. This type is usually the result of dystocia from faulty position or a disproportion of the head to the pelvic capacity with forceful instrumental manipulation or to hemorrhagic disease. As a general rule, the baby is either born dead or dies soon after birth. These infants offer no problem in therapeutics.

b. The moderate hemorrhage. In this type of hemorrhage the bleeding is usually subtentorially and consists of pouring out of blood into the surrounding areas with subsequent clotting, irritation of the arachnoid cells with secretion of spinal fluid and increased intracranial pressure. Hence: Bulging of the anterior fontanelle, irregularity in respiration, bradycardia, twitching, etc., focal symptoms dependent on the site involved and the extent of the bleeding. The symptoms call for prompt relief. The prognosis is indefinite and it depends entirely on how much of the blood is absorbed in the subarachnoid spaces without clotting and without scar formation. The survivors of this condition almost invariably emerge with some handicap. It may be a physical deformity (spastic paralysis) alone, or as is usually the cases, a mental retardation accompanying it.

The urgency of prompt treatment is too evident to require emphasis. This consists of two rational procedures. To stop the bleeding and reduce the intracranial pressure. Whole blood injected intramuscularly is generally accepted as the best coagulant. We usually inject into the buttocks, ten cubic centimeters of whole blood obtained from the father or mother, twice daily as long as there is evidence of bleeding. We do not use the commercial coagulants on the market, although they are probably better than nothing. To reduce the pressure we do spinal taps two or three times daily, depending upon the amount of pressure at the previous tap, also on the tightness of the fontanelle.

c. The mild hemorrhage. Slow bleeding into the intracerebral spaces is a most treacherous condition because of its elusiveness and its insidiousness. The symptomatology is vague and in the early stage does not seem referable to the nervous system. There is no twitching and no bulging of the fontanelle. A careful study of the infant may reveal certain intangible data which to the careful physician bring the impression that not all is well. Restlessness is always a signal of cerebral irritation. When accompanied by a refusal to nurse when no other explanation is apparent, a spinal puncture is definitely indicated.

This is done without difficulty. The presence of only a few red cells in the spinal fluid calls for immediate administration of blood intramuscularly, 10 to 20 cc. and repeated daily until the spinal fluid is clear. These small hemorrhages, in absence of hemophilia or hemorrhagic disease yield promptly to human blood injections. In our experience it is seldom necessary to give more than two injections before the bleeding stops. The small amount of blood lost in the subarachnoid spaces is absorbed without clotting and without scar. Full recovery is the rule in prompt treatment.

ASPHYXIA NEONATORUM

Asphyxia neonatorum has always been a serious problem and the methods of resuscitation employed varied from severe violence to strict non-interference. It is generally agreed now that rough handling of the newborn infant is injurious in its effects. Similarly, non-interference is a serious error of omission since respiratory stimulation properly done may save the life of a baby in asphyxial extremis. The principles to be observed are promptness and gentleness. A cyanotic baby with shallow or no breathing needs immediate relief or the rapidly developing acidosis will bring about tissue changes beyond recovery. It may be argued that the infant in holding its breath develops its own CO^2 which will serve as the respiratory stimulus. While this condition prevails in older infants whose respiratory center has had, let us say, experience in function, in the newly born this function cannot as yet be relied upon without the adequate cue. Help must be supplied from the outside. We use a mixture of CO^2 with oxygen and I do not believe that I am presumptious in stating that we have saved the life of many a baby hereby. At times one or two minims of alpha lobellin is injected intramuscularly where the CO^2 is not quick enough in its action.

THE PREMATURE NEWBORN

The premature newly born baby is practically always in a precarious situation. It is generally assumed that the greater the size of the premature baby, the better the prognosis for survival. This is undoubtedly a logical assumption since weight and length are indices of development. Yet careful analysis of deaths of premature newborns would hardly support this belief. Nor is the general care of these infants a comparative factor. It seems to me, from my experience at least, that some babies are expelled from the uterus prematurely to assume an independent existence, not only from the standpoint of size but from the point of view of carrying on vital activities in general. I could, if time permitted, cite to you cases of well developed premature babies who live one to five or six hours and for no reason apparent to us, suddenly stop breathing and no effort at resuscitation avails. The post mortem examination of all organs including the brain offers no clue. This type of baby was just unequipped to live. On the other hand, I have records of babies weighing two pounds (one with a weight of 1 pound, 14 ounces) who lived and developed uneventfully.

The care of the premature the first few days of life is exceedingly important when on views the premature organism as an immature human being struggling in a new environment. The immaturity extends to all essential physiological activities, viz. nutrition, respiration, heat production and distribution. Maintaining of these functions is not difficult providing our management is based on sound principles. The nutrition must be outlined on the basis of a small stomach capacity and insufficient enzyme secretion. Food given must, therefore, be concentrated into small bulk and modified to a degree where it can be digested and assimilated. At times the infant, the first few days, cannot hold more than one or two drams at a feeding. Breast milk is, of course, the food of choice but unfortunately the conditions which predispose to prematurity frequently preclude breast function. The best substitute for breast milk in these infants is condensed unsweetened milk, modified with lactic acid, 2 or 3 drops per ounce, and dextrinized sugar. This is fed by dropper every 2 or 2½ hours. Where the infant only ingests 1 or 2 drams we do not hesitate the first 2 or 3 days to feed every hour or so. The general care of the baby consists of a policy of non-disturbance. The less the child is molested the better he will develop. The child is kept clean by occasional changes in clothing, with a bath about once a week if conditions allow.

One of the most important items in the care of the premature is the regulation of heat and moisture. In absence of a commercial incubator, a homemade contraption can be devised with light bulbs to supply heat when connected with the light current. Care must be taken against hyperthermia as well as against hypothermia. In absence of an automatic thermostat the temperature must be watched carefully and the lights turned on or off with the changes in the degree of heat. An optimum temperature is between 98 and 100 degrees F.

These are but a few of the practical problems which I have chosen to enumerate. There are many more which could be profitably considered. We have not concerned ourselves with the later care of the newborn for the reason that the first two weeks are the most precarious in the life of the helpless organism. It is hoped that an active interest in this period of life may bring about a better understanding and a just pride in improving the present status of the newborn.

FREE FULL-THICKNESS SKIN TRANSPLANT

ROBERT D. SCHROCK, M. D., and HERMAN F. JOHNSON, M. D.,
Department of Orthopaedic Surgery, University of Nebraska College of Medicine,
Omaha.

The indications, technic, dressment and aftercare of the full thickness skin graft are all of great importance.

INDICATIONS

In our group of cases, contractures in the palm of the hand and fingers as a result of burns or lacerations are by far the larger number. In syndactylism, this method is the desirable one for supplying necessary skin at the clefts. Flexion contractures at the elbow or knee if the cicatrix does not cover too large an area may be handled by this type of transplant. The plastic surgeon per se finds this form of grafting adaptable in facial defects of many varieties. Skin tumors which leave considerable exposed surfaces on excision may require only this one stage procedure. In general, though, its greatest field is in the vicious cicatrices encountered by the orthopaedic surgeon called upon to correct extremity deformities.

Contra-indications for this graft are very definite. Granulating surfaces, exposed tendons or bone constitute the major barriers. If considerable deep tissue is lost, pedicle grafts are preferable. Areas greater than the width of the palm of the hand are apt to slough. If immobilization and even pressure cannot be instituted as postoperative measures, the chances are poor. The axilla and neck present this difficulty and therefore are not suitable regions.

TECHNIC

Careful asepsis, complete excision of the cicatrix, accurate pattern of the defect, proper thickness and care of the graft, hemostasis, careful suturing and attention to dressing and splinting constitute the problems of major importance for success.

Preliminary preparation of the skin should be carried out 24 hours before operation by soap and water scrub, followed by ether and alcohol. In our opinion, the external surface of the upper thigh offers the most desirable type of skin for the palm of the hand. This area has less hair than the abdomen and its quality is better for the function necessary in the palm. The scar tissue should be excised completely, so that the cut edges are through normal skin and the fresh bed is composed of healthy, subcutaneous tissue in which tendons or bone are not exposed. With proper dissection of the involved tissues, correction of the deformity caused by the cicatrix should be easily accomplished. Hemostasis is obtained by firm compression with a warm moist sponge and ligature of any bleeders which are persistent after failure by pressure alone. The majority of the small vessels found in the subcutaneous layers are sealed off after a hemostat is applied for a few minutes.

Many materials have been used for the pattern and that which is available is satisfactory so long as it serves the purpose of accurate reproduction. We generally use thin rubber tissue, because of its availability, ease of handling and translucency. This clings smoothly to the fresh surgical wound and the outline of the defect may be observed as the pattern is being carefully cut.

The skin flap obtained should be the exact size of the pattern as no shrinkage takes place and no subcutaneous fat should be present on the under surface, the appearance here being similar to the dimpling of pig skin. Only margins of the flap should be handled with fine mosquito forceps or special hooks, as any trauma to the graft lessens considerably the chances of a good "take." Direct transfer of the graft to the defect is desirable; the latter having been compressed with a warm moist normal saline sponge during the second stage of the operation. The fresh wound should by that time be dry and ready to receive the graft.

Very fine interrupted dermal sutures are placed at various angles so as to properly fit the graft after which similar sutures are placed at close intervals apposing the cut edges of graft and bed. We prefer perforating the graft with a fine pointed knife for the purpose of permitting the serum exudate from the bed to migrate into the graft, favoring early vascularization as well as to allow any blood collecting beneath the graft to escape, as this complication means necrosis and subsequent failure. To insure close approximation of the bed and graft, several sutures of 000 catgut are taken into the latter at various points and caught into the subcutaneous tissue similar to quilting; these we refer to as "dimple stitches." When suturing is complete, the graft appears white, on slight tension and not raised above the surrounding normal skin. If on the palmer surface of the hand and fingers, complete extension of the latter should be possible, the projections of the graft extending smoothly on each finger and shaped to give a full cleft at the base; thus avoiding the development of a web between the fingers.

The dressing, which includes smoothly placed gauze sponges moistened in boric solution and several layers of sterile sheet wedding as a springy pad, is applied with slight pressure. Sea or rubber sponges may be used for the pressure dressing, but the flattened sheet wadding padding has been used very successfully by us in extremity grafts.

Application of a molded plaster splint insures fixation and permits correct position of the part to prevent contracture as the graft "takes."

AFTER-CARE

We prefer keeping the dressings slightly moist with boric solution and "snugging" up the pressure pad by adding bandages about every four days. Usually the original dressing is not disturbed for two weeks. At that time, sutures are removed and a dressing similar to the first applied, including the splint. The appearance of the graft at this time is usually rather disconcerting, as its surface may be entirely black, but this degenerative change is confined only to the superficial epidermis, beneath which the viable transplant is found. Maceration and marginal necrosis of the graft usually means scarring of variable degree, which produces an elevated suture line. In a few instances, a low grade infection has developed as a late manifestation, and this also gives undesirable permanent changes.

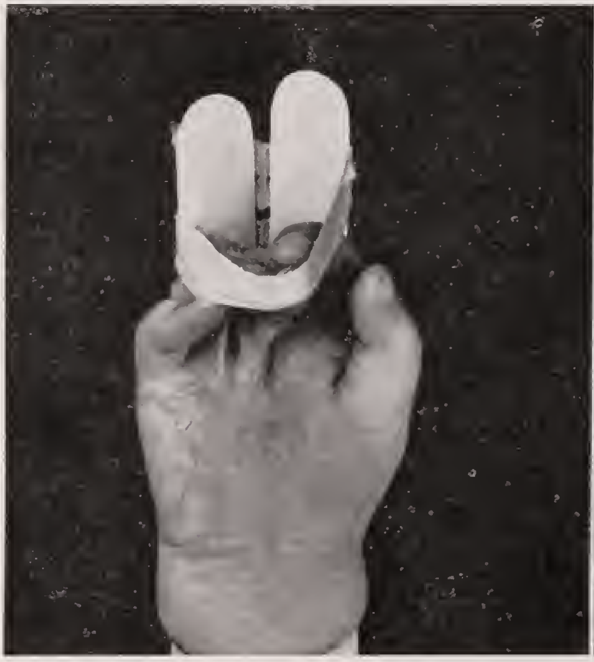


Fig. I: Right hand before operation, showing vicious cicatrix in palm and three fingers. Left hand identical in appearance.

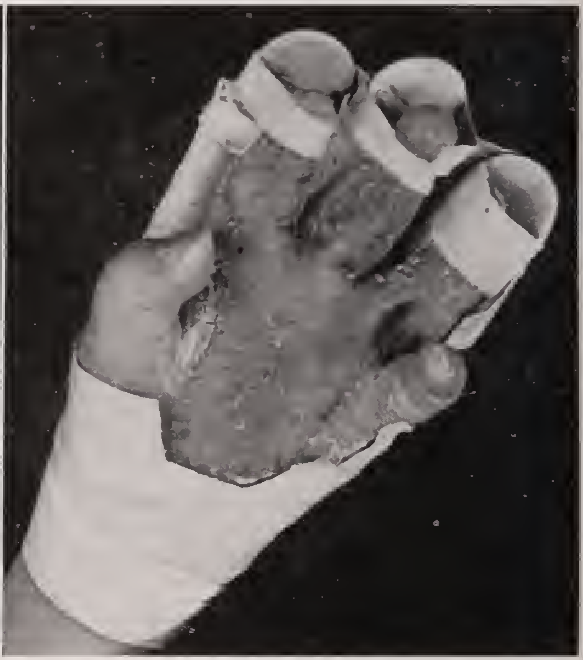


Fig. II: Appearance of graft (left hand) three weeks after operation. Note method of splinting.

At the end of three or four weeks, if the area is dry and clean, all dressings may be removed, but splinting to prevent contractures should be continued for at least six weeks. This is especially desirable in grafts involving the fingers, as flexion deformities may develop late; although the quality of the skin be very good. A simple splinting for the palm and fingers is the use of tongue depressors strapped on the dorsal surface of the wrist and extending out on each finger with an encircling band of adhesive at each tip. (Fig. IV). This is easily applied and always available. Special metal splints with rings for each finger may be constructed so as to strap on at the wrist, the principle being the same as the tongue depressor arrangement.

It is advisable to keep the grafted skin soft and pliable by the occasional application of vaseline. With time, the quality of this new skin will change, depending upon required function. In the palm, the less durable skin from thigh or abdomen eventually becomes hardened to its more strenuous duties. Through this period of transition, a watchful eye must be kept for contractures, and it is desirable that simple night splints be worn for several months.

The prognosis for this method of skin graft is dependent on close adherence to all details enumerated here. Our percentage of very satisfactory results on palm and finger contractures is estimated as 90%. The following case illustrates a typical deformity, appearance of the graft before complete healing has taken place (Fig. II); on one hand a very excellent result (Fig. IV) and on the other a good result—although a low grade infection developed in the proximal palmer portion three weeks after operation (Fig. III).

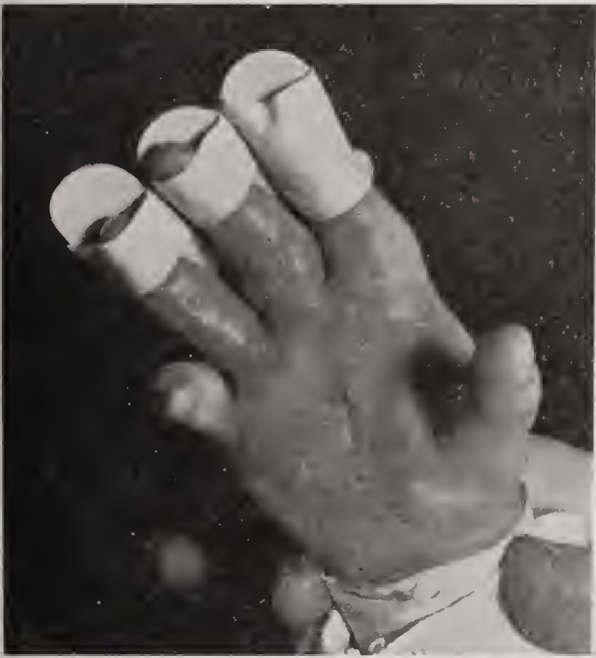


Fig. III: Right hand eight weeks after operation. Some scarring in palm as result of infection and marginal slough.

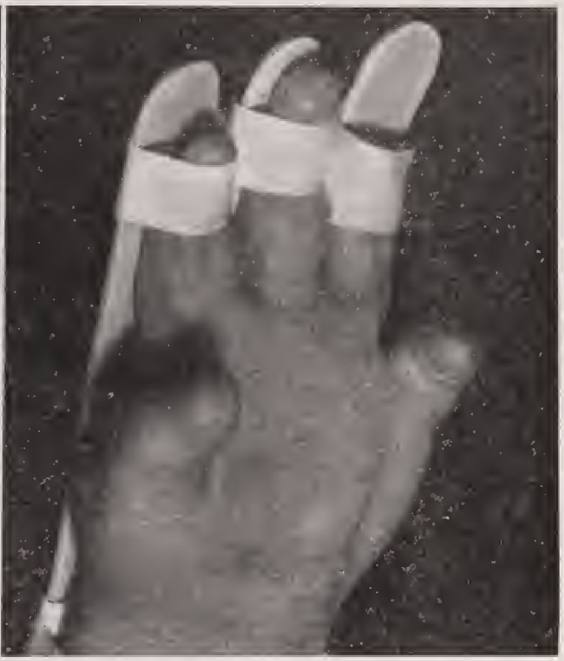


Fig. IV: End result left hand three and one-half months after operation. Note smooth and pliable appearance of graft with complete correction of flexion deformity.

CASE REPORT

A baby boy of eighteen months was admitted to the University Hospital on July 8, 1933, with a history of burns to both hands sustained four months previously when he fell against a stove. The palms and three fingers of each hand were involved almost symmetrically by second degree burns which became infected and did not entirely heal for three months.

On examination, both hands presented the picture as seen in Fig. 1. A cicatrix involving the central portion of the palm and projecting to the distal phalanx of the index, middle and ring fingers, produced sharp contractures of these three fingers. A thin parchment like skin covered the area with tight bands of scar tissue beneath.

After preliminary preparation of the right hand and upper right thigh, a full thickness skin graft was applied, following in minute detail the technic already described. Fig. II is a photograph of this hand three weeks after operation, showing the size of the graft required. The "take" was unusually good. Splinting in extension by dorsal tongue depresser splints as illustrated was carried out continuously for six weeks, and at night until the child was discharged from the hospital thirteen weeks after the first operation.

The end result in this hand was very excellent as shown by Fig. IV. There was no functional disability, the quality of the skin was good, and the graft was not elevated. The suture margins faded out rapidly, so that at four months after operation, the line of demarcation between graft and normal skin was very faint.

A second and exactly similar procedure was performed on the right hand by the same operator (H.F.J.) five weeks after the first operation, but due to a low grade infection in the palmer portion of the graft, the end result was not so beautiful as in the other hand, but very satisfactory from the standpoint of correction of the contractures. (Fig III).

The case described illustrates a typical problem encountered in this field of surgery, and the free full thickness graft is the ideal method of treatment. Painstaking attention to all details is necessary for satisfactory results.

ANTEMORTEM INQUEST

"Doctor Blank of the State Board of Health was in town yesterday to hold an inquest over John Jones who is suffering from small pox."

SIX HUNDRED KILOVOLT RADIATION*

ROSCOE L. SMITH, M. D.,
Lincoln, Nebraska.

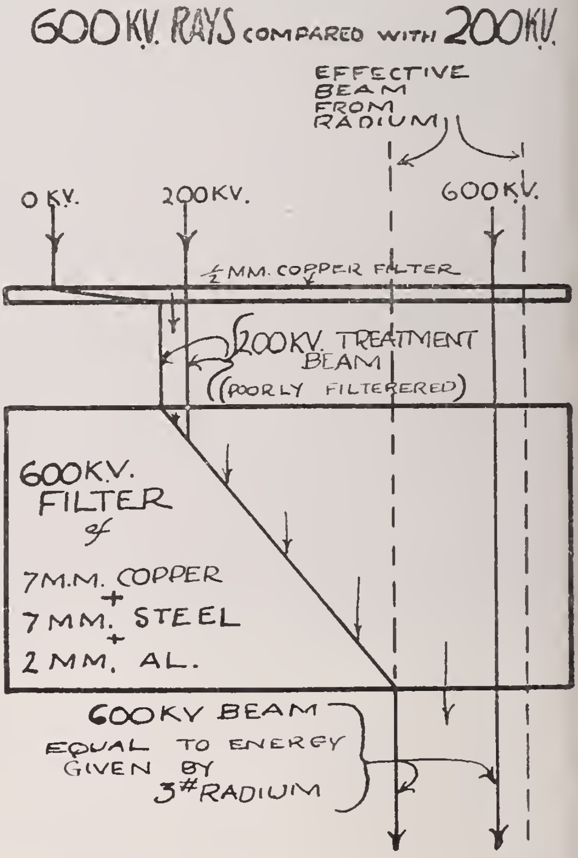
Radiation in one form or another, x-ray or radium, has been used as a palliative and curative agent on cancer for a long time, more seriously, however, during the past twelve years, until at the present time it is almost universally believed to be one of the best procedures known in the control of cancer.

In the past we have made every effort and many different formulas to accomplish desired results, namely to put sufficient x-ray in the depth of the body to destroy cancer cells without damage to the skin and normal tissue. We increased the distance as much as possible but still the desired effect was not forthcoming. We increased the filter to ½ millimeter copper and 1 millimeter aluminum for the same reason, all to the same end, that we might increase the depth dose. Regardless of all theories we could not put sufficient short wave length radiation in the body to control the tumor growth and with but a few exceptions our tumors continued to grow and the inevitable happened.

It has been true in the past that a combination of x-ray, radium and surgery were the best methods of attack, but I am frank to say they have all been weak links in an endless chain of endeavor. In the few months of our experience with 600 K. V. constant potential x-ray I have seen more and better results than in my entire experience with 200 K. V. treatment, and that dates back to the very beginning of deep therapy.

It is about 600 K. V. therapy that I wish to talk. At the present time we have sufficient power to permit us to use ¼ inch copper, ¼ inch steel, and ¼ inch water as a filter. This is sufficent to absorb all the long wave lengths and leave only the short and effective ones for treatment. We no longer have skin reactions and radiation sickness is a thing of the past. Those suffering from pain get relief within the first two weeks. It is by far the greatest palliation I have ever seen and this applies to those who have had previous 200 K. V. radiation to the limit. We are permitted to safely administer many times the dose that could possibly be given with smaller outfits. The reason for this is best explained by referring to the different wave lengths of light as they appear on the spectrum. For our purpose we will consider only the band of light known as x-ray or radium rays and as you will readily see the shorter the wave length the higher up on the scale of the spectrum. Also in x-ray the higher the voltage the shorter the wave length and the shorter the wave length the greater the penetration and the minimum absorption by the skin.

In 200,000 volt x-ray, or that commonly referred to in the past as deep therapy, the long wave lengths were produced in abundance and as you can see by referring to the spectrum they were much lower on the scale than those produced by radium.


600 KV. RAYS COMPARED WITH 200 KV.
EFFECTIVE BEAM FROM RADIUM
0 KV.
200 KV.
600 KV.
½ MM. COPPER FILTER
200 KV. TREATMENT BEAM (POORLY FILTERERED)
600 KV. FILTER of 7 M.M. COPPER + 7 MM. STEEL + 2 MM. AL.
600 KV BEAM EQUAL TO ENERGY GIVEN BY 3# RADIUM

If sufficient filters were employed and sufficience distance was utilized to eliminate all the long wave lengths or undesirable portions of those produced by 200 K. V. x-ray practically the entire beam would be absorbed leaving so few short waves with penetration sufficient to pass through the filters that it would require several days or even weeks of continuous treatment to administer a full depth dose. Theorectically this might be done but it is pure theory and not practical regardless of statements to the contrary.

---

*Read before the Madison-Six County Medical Society, Norfolk, Nebr., January 16, 1934.

With 600 K. V. or over we are using ¾ inch of filtering material compared to the average filter of ½ mm. which is used on 200 K. V. equipment. Sufficient power to produce enormous quantities of short effective wave lengths is applied to the tube and as a result of the heavy filtration long distances (70 cent.), the super voltage we have what the chemist would term a chemically pure product. With all the by-products and harmful and bothersome radiation removed we are permitted to deliver to the tumor at any depth in the body a lethal dose of the refined short wave length radiation.

In Lincoln we are actually treating patients with 500 to 600 K. V. constant potential and to the best of my knowledge it is the only plant successfully operating under these conditions. Already we have been most gratified by the excellent palliation, the entire absence of reactions, no nausea, no abnormal blood changes, no skin reaction, and very rapid recession of tumors. In all we have treated some 75 cases of various types of tumors. It is unnecessary to tell you that a large number of them present themselves in a third state of the disease when nothing but palliation could be expected. All patients first receive a complete physical examination accompanied by the routine blood, urine and sedimentation tests together with an x-ray examination when indicated. A board of consultants, composed of two surgeons, and two internists confer with me relative to the diagnosis and the best method of procedure. In addition various members of the staff are available for consultation on special cases such as pathology, urology, otolaryngology and others who are specially qualified in certain types of tumors.

T. R. Folsom, physicist, formerly of Pasadena, is also associated with me and has complete charge of all physical problems. Mr. Folsom is completing the equipment of a physical laboratory for continued research on problems which confront us daily, the results of which are carefully recorded and will be checked with the Bureau of Standards in Washington, D. C.

To convey to you the correct impression I will give you a few very brief case reports and present the patients so that you may see the actual changes that are taking place in tumors treated with 600 K. V. radiation.

Mrs. Papik, age 50, a resident of Lincoln.

She first consulted me in 1931 immediately following a resection of a lymphosarcoma by Dr. Harry Everett. The involved area was the left axilla. We immediately began a series of 200 K. V. treatment and from time to time in the usual procedure administered the usual amount of radiation. She remained well for about one year at which time she again consulted me with a nodule near the margin of her previous scar. A biopsy proved this to be lymphosarcoma, according to the report of Dr. Geo. Covey. The area of recurrence was thoroughly treated with radium needles which were imbedded in and surrounding the pathological area. The lesion promptly disappeared and she remained well for a few months when a secondary nodule again appeared and was again treated with radium. This secondary lesion also disappeared and I heard nothing more from her until October 25, 1933, when she again presented herself, this time with marked loss of weight, a harassing aggravating cough, constant pain in the upper left chest. An x-ray plate on this date shows a consolidation of the upper lobe of the right lung and a small circular area of consolidation at the root of the left lung. 600 K. V. treatment was started October 26, 1933.

One treatment was administered daily for 18 days. She received a total of 3,600 R. units. After the first ten days her cough and pain had subsided and when she was dismissed she was symptomatically free. She returned for a radiographic examination on November 27, 1933, one month from the time her treatment was begun. She was symptom free and her x-ray plate of that date in comparison with the one made before her treatment showed a complete disappearance of the consolidation in the upper right lobe and in the left root area.

Mrs. Biggs, age 45, a resident of Lincoln.

In July, 1931, Mrs. Biggs had a radical amputation of the right breast for an advanced carcinoma. The operation was performed by Dr. H. Everett who referred her to me for 200 K. V. therapy. The usual series of deep therapy was applied to the anterior and posterior and lateral surfaces of her right thorax. She remained well until October 28, 1933. She complained of a very severe harassing cough which could not be controlled. She had lost weight, was suffering from insomnia, night sweats and loss of appetite. A roentgenogram of the chest showed marked consolidation in both lungs, only a small amount of normal air cells were visible. We began treatment on October 28, 1933, and administered 7,200 R. units between that date and November 27, 1933. On December 23, 1933, approximately two months from the time her treatment was begun an additional x-ray plate was made of her lung for a comparison. Much to our surprise we found that the tumor had receded and instead of the consolidated areas which were visible before her radiation, we found mostly scar tissue with marked retraction leaving large areas of normal breathing space. The most amazing change, however, occurred at the end of her first week's treatment when all of her symptoms had subsided and from that time her gain in weight was progressive.

Another interesting case was that of Mr. Adamson, 36 years of age, a resident of Springfield, S. D.

Mr. Adamson originally had a sarcoma involving the right inguinal glands. Repeated attempts had been made by Dr. Roy Stevens of Sioux Falls, S. D., to irradicate the tumor surgically. When patient arrived in Lincoln on November 25, 1933, there was a huge mass involving the right groin extending from 8 or 10 inches along his thigh and well up into the pelvis. His right leg was twice the size of the left. He had lost weight and was suffering excruciating pain. Our greatest difficulty in his treatment was securing cooperation in maintaining the necessary position on the treatment table. His pain was so intense that even morphine in liberal doses was not sufficient to afford him relief. He was given 9,600 R. units of

600 K. V. x-ray between the 26th day of November and the 22nd day of December. After the first two weeks of treatment he left the hospital and secured a room on the outside and would make daily trips to the institution for treatment. He was dismissed on the 22nd day of December, walked three blocks to the car line, took a street car to the bus depot and proceeded by bus to Springfield, S. D. He was absolutely free from pain. The tumor had receded until it was but a small nodule in the right grain some three inches in diameter. The right thigh diminished in size until it closely approached that of the left.

Mrs. Schultz, age 56, a resident of Lincoln.

This lady appealed to me for relief of a large tumor in her right breast. Two other members of her family had recently suffered from breast amputations and recurrences. There was a large palpable tumor. There was considerable retraction of the breast and dimpling of the skin, all of which caused her considerable pain. 3,600 R. units of 600 K. V. radiation was delivered through three portals of entry between November 16, 1933, and December 9, 1933. According to previous arrangements she returned on December 15. The tumor had receeded to 1/3 of its original size. The retraction had disappeared, the dimpling of the skin was barely visible and it was difficult to palpate the tumor mass. The breast was amputated and the entire exposed area was thoroughly cauterized with an electric iron. Her recovery was uneventful and she returned home on the 24th of December. The pathologist's report on sections is of great interest and is as follows:

"Gross: The specimen consists of an amputated breast. Externally it is not remarkable. On cut section there is an irregular hard area of tumor mass seen just beneath the skin surface. Its borders are indefinite and the cut surface is characterized by yellow streaks running through its substance. Examination of the axillary fat shows a few small lymph follicles which on cut section have the appearance of broken down tumor tissue.

"Microscopic: Sections of the breast tumor which has received deep therapy before removal shows many striking changes of the tumor cells. Most of the sections show only shadows of tumor cells remaining. Here the tumor cell is characterized by a small pycnotic nucleus and the cytoplasm is distended with a clear pale staining substance. Another area shows the nucleus to be granular and there is a marked degree of karryorrhexis. Most of these cells must be interpreted as being lifeless. At the periphery of the tumor mass there are a few cells which as judged by their staining characteristics would appear to still be viable. However, even in these areas there is definite indication of cell damage. About the clumps of tumor cells there is a scattered rather diffuse lymphoid infiltration. Some of the muscle cells making up the breast tissue have undergone hyalinization. However, there is no histologic evidence of an actual increase of collagen fibers. These shadows of tumor cells appear in columns and strands and an original section of the tumor would probably have shown a typical scirrhous carcinoma.

"Diagnosis: Scirrhous carcinoma of the breast.

"J. Marshall Neely, M. D., Pathologist."

Another interesting case is that of Mr. Bateman of Cheyenne, Wyo. He was 20 years of age and had been diagnosed tuberculous peritonitis. He was treated by various agents for 6 or 8 months and finally sought other medical assistance. He consulted Dr. Williams of Laramie, Wyo., who after careful study and several days of observation was of the opinion that he was suffering from a sarcoma. A large mass in the abdomen was easily palpable. Dr. Williams referred him for 600 K. V. radiation. After a careful examination and in due course we agreed with the diagnosis. At that time his waist line had increased 8 inches over normal. He was constipated, had no appetite, was sallow, had lost considerable weight, and complained of extreme physical exhaustion. A total of 9,600 R. units of 600 K. V. radiation was administered through 8 portals between the date of December 1, 1933 and December 24, 1933. When treatment was started he was so exhausted that he was hardly able to be up and around. On the 18th of December he informed me that he had walked 25 blocks, and included a tour of the state capitol. He returned to his home with his abdomen flat. There was no palpable tumor. His appetite was good, he was not constipated and he was feeling normal in every way.

One of the most interesting cases that it has been my privilege to have under observation and treatment is that of a Mr. Long, a resident of Plymouth, Ill. Mr. Long is 85 years of age. He was referred to me by Dr. Harry Flansburg, an internist, and Dr. C. C. Hickman, a proctologist. He had a large palpable mass surrounding his anal canal and extending upward involving his bowel for 2 or 3 inches. His gut was constricted until it was impossible to insert the examining finger. There was a marked loss of weight, he was cachectic, no appetite, a constant feeling of uneasiness, extreme pain and insomnia. He had constant pain and distress in his rectum. He was passing 20 or 25 bloody stools in 24 hours. He was thoroughly aware of his condition and had given up all hope of relief. A total of 6,000 R. units of 600 K. V. radiation was administered through five portals of entry between the period of October 1 and October 31, 1933. His total time under radiation was approximately 10 hours. On January 5, 1934, he returned for his second series. He had gained in weight and he had the appearance of a normal man of 70. He is unusually vigorous. He has no pain. He is having normal well formed stools, one a day or one every other day. His diet consists of the ordinary food of the average family. There are no restrictions. He has remained in his present condition since the first of December, 1933, and as he expressed himself he is not conscious of any disturbance whatever.

Such changes as these never occur with 200 K. V. therapy, regardless of how intelligently it may be administered. Our experience has been such that we believe the therapy of tomorrow will be 600 K. V. constant potential or equivalent and that 200 K. V. therapy, if used at all, will be applied on superficial lesions only.

I realize my statements are abrupt and possibly bold. The proof of my assertions, however, may be learned from those whom we have treated.

I invite the most rigid investigation by the members of the medical profession, who will be welcome should they desire a personal inspection.

Doctor—"What? Troubled with sleeplessness? Eat something before going to bed."

Patient—"Why, Doctor, you once told me never to eat anything before going to bed."

Doctor (with dignity)—"Pooh, pooh! That was last January. Science has made enormous strides in the last few months."

ETIOLOGICAL VIEWPOINT IN DIAGNOSIS OF HEART DISEASE

B. CARL RUSSUM, M. D.,
(From the Department of Pathology, Bacteriology and Preventive Medicine, The Creighton University School of Medicine),
Omaha, Nebraska

Heart disease is responsible for 200,000 deaths yearly in the United States. One out of five children living at the age of 10 will die of organic heart disease(1). Heart disease, therefore, merits and is receiving intensive study.

Most important in the development of our knowledge of heart disease has been the growth of the etiological viewpoint in clinical diagnosis and pathological classification. The development of this viewpoint is best exemplified by the changing classifications employed by leading text-book authors of the past two decades. Beginning with Dieulafoy(2) in 1911 we find the following classification based upon pathology, morphological and functional:

1. Pericarditis
2. Endocarditis
3. Myocarditis
4. Neuroses of Heart
    - Palpitation
    - Paroxysmal Tachycardia
    - Permanent Bradycardia
    - Exophthalmic Goiter

Then Osler(3) in 1912, Anders(4) in 1915, Barker(5) in 1916, and Stevens (6) in 1924 followed similar classifications. Cabot(7) since 1914 had urged the importance of an etiological classification and in 1926 adopted the following in his "Facts on the Heart"(8).

1. Rheumatic Heart Disease
2. Syphilitic Heart Disease
3. Hypertensive Heart Disease
4. Myocarditis
5. Angina Pectoris
6. Acute and Subacute Endocarditis
7. Chronic Deforming Valvular Sclerosis and Endocarditis
8. Acute and Chronic Pericarditis
9. Thyrocardiac Disease
10. Congenital Heart Disease

The advantages and importance of the etiological factor in diagnosis have been pointed out by many other eminent clinicians, among them Herrick(9) and Pardee(10). The importance of knowing whether a given aortic leak is due to syphilis, arteriosclerosis, or rheumatism, is evident, since treatment and prognosis will vary according to that knowledge.

In our work in the correlation of autopsy with clinical findings, we, too, find a classification based upon etiology and pathology essential to the proper understanding of a given case. We have classified the hearts from our last 1,000 autopsies, as fellows, modified from Clawson(11) and White(12):

ORGANIC HEART DISEASE IN 1000 AUTOPSIES

1. Diseases of Pericardium	10
2. Congenital	3
3. Infectious	
a. Rheumatic	
Acute	0
Subacute	6
Old Valve Defects	26
b. Bacterial Endocarditis	
Acute	5
Subacute	
On Normal Valves	0
On Diseased Valves	8
c. Indeterminate Group of Endocarditis	0
d. Diphtheritic	0
e. Tuberculous	0
f. Cardiovascular Syphilis	22
4. Non-Infectious	
a. Primary Hypertensive	63
b. Pulmonary Hypertension	0
c. Coronary Sclerosis	46
5. Miscellaneous	
1. Thyroid	
a. Hypothyroidism	0
b. Hyperthyroidism	2
2. Heart in Glomerulonephritis	4
3. Hypertrophy Without Hypertension	0
4. Toxic	0
5. Traumatic	0
6. Tumors	0
7. Unknown	0
	195

Heart disease as the actual cause of death in the above table, was as follows:

HEART DEATHS IN 1000 AUTOPSIES

1. Diseases of Pericardium	10
2. Congenital	3
3. Infectious	
a. Rheumatic	
Subacute	6
Old Valve Defects	26
b. Bacterial	
Acute	5
Subacute, on Diseased Valves	8
c. Syphilis	22
4. Non-infectious	
a. Primary Hypertension	50
b. Coronary Sclerosis	24
5. Miscellaneous	
Hyperthyroidism	2
	166

In the United States in 1929 one in every 6 deaths was due to heart disease, exactly the same figure encountered in our isolated 1,000 autopsies, as tabulated above.

Examination of our 1,000 hearts, and comparison of the clinical and anatomic diagnoses, show the lack of correlation between the two. The cases came from different hospitals, deaths at home, and some from the coroner's service. A glance at the variety of cases listed under the clinical diagnosis of "mitral regurgitation" will serve to show how treatment and prognosis cannot be accurate when only such a diagnosis is listed.

COMPARISON OF CLINICAL AND ANATOMICAL DIAGNOSIS

Clinical	Pathological	
Mitral Regurgitation	Old Valve Defects	10
	Subacute Bacterial Endocarditis	2
	Acute Bacterial Endocarditis	2
	Cardiovascular Syphilis	2
	Infectious Heart Disease, Rheumatic, Recurrent	2
	Hypertension	1
	Coronary Sclerosis	1
	Dissecting Aneurysm, Aortic	1
Aortic Regurgitation	Old Valve Defects	11
	Cardiovascular Syphilis	6
	Adherent Pericardium	2
	Coronary Sclerosis	1
Chronic Myocarditis	Old Valve Defect	1
	Hypertension	8
	Cardiovascular Syphilis	6
	Coronary Sclerosis	12
Myocardial Degeneration	Hypertension	5
	Old Valve Defect	1
	Coronary Sclerosis	1
	Adherent Pericardium	1
	Cardiovascular Syphilis	1
Decompensated Heart	Hypertension	6
	Syphilis	2
	Old Valve Defects	2
	Exophthalmic Goiter	1
	Adherent Pericardium	1
	Coronary Sclerosis	1
Cardiovascular Syndrome	Hypertension	2
	Coronary Sclerosis	2
Sudden Heart Death No Diagnosis	Hypertension	1
	Coronary Sclerosis	6
	Ruptured Heart	1
	Coronary Thrombosis	1

CONCLUSIONS

The importance of etiology in the diagnosis of heart disease has come to be recognized. An etiological classification of heart disease is necessary for proper correlation of pathological and clinical findings. A marked variation is evident between clinical and anatomic diagnosis, when the former is based solely upon clinical signs and symptoms. Such variation leads to inefficient treatment and prognosis.

BIBLIOGRAPHY

1. Boyd, W.: The Pathology of Internal Diseases, p. 2. Lea and Febiger, 1931.

2. Dieulafoy, G.: A Text-book of Medicine, p. 385-534, D. Appleton & Co., 1911.

3. Osler, Wm.: The Principles and Practice of Medicine, p. 760-863, D. Appleton & Co., 1914.

4. Anders, James M.: A Text-book of the Practice of Medicine, p. 613-737, W. B. Saunders Co., 1915.

5. Barker, Lewellys F.: Monographic Medicine, Vol. I, p. 820, D. Appleton & Co., 1916.

6. Stevens, A. A.: The Practice of Medicine, p. 630-734, W. B. Saunders Co., 1924.

7. Cabot, R. C.: "The Four Common Types of Heart Disease." Jour. A. M. A., 1914, LXIII, 1461.

8. Cabot, R. C.: "Facts on the Heart." W. B. Saunders Co., 1926.

9. Herrick, J. B.: Clinical Signs of Heart Disease, With Particular Reference to Etiology, J. A. M. A., 95:1631 (Nov. 29, 1930).

10. Pardee, H. E. B.: The Importance of Etiology in the Diagnosis of Heart Disease, Med. Clin. of N. Am. 13:649.

11. Clawson, B. J.: Disease of the Heart, Text-book of Pathology. E. T. Bell, p. 357, Lea and Febiger, 1930.

12. White, P. D.: Heart Disease, p. 302, The MacMillan Co., 1932.

THE USE OF BLOOD SERUM IN PREGNANCY TESTS

HARLEY E. ANDERSON, B. Sc., M. D.,
From the Department of Obstetrics, University of Nebraska
College of Medicine,
Omaha, Nebraska.

The profession has been for a number of years in search for an accurate, simple test to be used in the diagnosis of early pregnancy. This is not a new idea as numerous rather crude tests may be found throughout the early medical literature. Even the ancients used the urine from supposedly pregnant women as a vehicle by which they endeavored to verify the diagnosis of early pregnancy. However, they were unaware that a hormone was to be found in the urine of pregnant women which at present enables laboratory workers to make a positive diagnosis of pregnancy during the first few weeks of intra-uterine life.

Some twenty years ago the Abderhalden test was employed to help make a diagnosis of early pregnancy, but this test was short lived, and because of its inaccuracy never merited many advocates. This left us for a number of years without a great deal of work being done on a laboratory diagnostic test for pregnancy until the time when Aschhiem and Zondek began to publish their preliminary work in 1925. Practically everyone knows that the basis of their test hinges upon a hormone set free from the anterior lobe of the pituitary gland in pregnant women, and also that they were able to ascertain that this hormone was found in the urine. They were able to take urine and inject it into immature mice and after a number of days to kill these mice and find enlarged corpora hemorrhagica and corpora lutea from the ovaries of these mice. There were a number of difficulties encountered in the technique of this procedure, namely the using of a large number of laboratory animals, as well as difficulty in recognizing the various corpora in such a small organ as the mouse ovary. For this reason Friedman in 1929 suggested the use of mature virgin rabbits instead of immature mice. By so doing the test was simplified, first by reducing the number of laboratory animals from five mice in Aschheim Zondek test to one rabbit in Friedman test, thereby facilitating ease of diagnosis, secondly because of the increased size of the rabbit ovary, and thirdly because of the shorter time required in making the diagnosis.

It occurred to T. K. Brown and his co-workers that inasmuch as the basis of this procedure hinged upon the hormone from the anterior pituitary body, very possibly this hormone must be floating free in the blood stream. He then varied the procedure and introduced blood serum into the marginal ear vein of the rabbit instead of urine as had been used heretofore. He has also used cerebrospinal fluid with some degree of success, but has obtained more accurate results by the use of blood serum, rather than either urine or cerebrospinal fluid.

Inasmuch as Brown had reported such a high degree of accuracy with the use of blood serum in rabbits, we endeavored to follow his technique in the laboratories at the University of Nebraska College of Medicine. Our series of cases is rather small, numbering one hundred in all. The source of blood serum used was obtained from patients in the pre-natal dispensary, the University hospital, as well as from private cases. Our first difficulty lay in the correct selection and proper keeping of laboratory animals. Insofar as possible we endeavored to obtain virgin female rabbits not weighing more than fifteen hundred grams. The best results are obtained when the laboratory raises its own rabbits, selects the female rabbits and keeps each one in a separate cage until it is used. The necessity for these precautions as pointed out by Goichi, lies in the fact that the rabbit does not ovulate except after copulation. It is also desirous to have but one female in the cage since genital irritation, which might be produced by another female, very likely induces ovulation to take place.

The blood specimen is drawn from the arm of the patient in the same manner as a blood Wassermann. About ten cubic centimeters of blood are drawn and deposited in a sterile centrifuge tube. The specimen is then allowed to stand in the ice box over night, and if not enough serum is separated out, the specimen is centrifuged for a few minutes. In our earlier experiments we used the blood serum immediately and found that a greater majority of our rabbits died from anaphylactic shock. However, in the intravenous

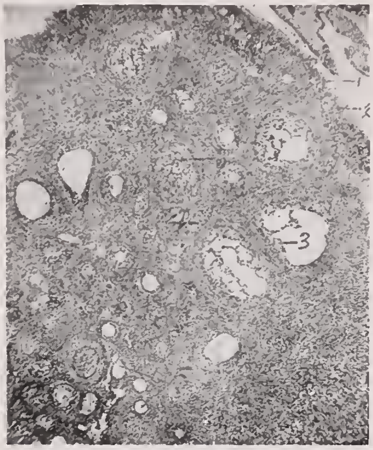


Figure 1: Cross section of a normally mature rabbit ovary. x35. 1, germal epithelium; 2, growing follicles; 3, Graafian follicle; 4, corpus luteum atreticum; 5, blood vessels; 6, peripheral section of vesicular follicles.

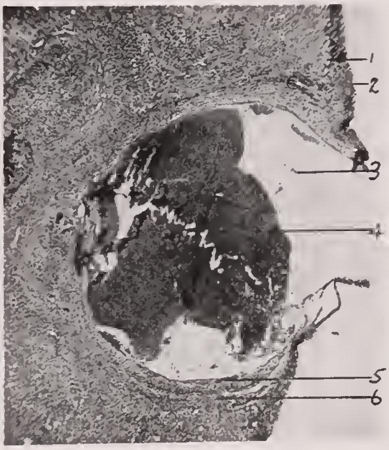


Figure 2: Section of right ovary from mature rabbit 24 hours after injection of 2.5 cc. of patient's serum. x35. 1, primary follicle; 2, surface of ovary with germinal epithelium; 3, follicular liquid; 4, granular precipitate; 5, membrana granulosa; 6, theca externa and interna. It will be noted that the Graafian follicle in this section has been stimulated to size several times larger than the ones seen in the normal ovary (Fig. 1), also that the follicle has migrated to the periphery of the organ, the outer part of the wall is very thin and has ruptured allowing part of the follicular liquid to escape, while the remaining liquid has in part formed a fine granular appearing precipitate. This is a typical section of a positive reaction to the test.

use of blood serum which has stood in the ice box over night, no such difficulty was encountered. Our usual dosage was two and one-half cubic centimeters of blood serum which was injected intravenously into the marginal ear vein of the rabbit. The animal was then deposited in its cage and usually left for forty-eight hours. At the end of that time the abdomen was opened and the ovaries and tubes, as well as the uterus, examined. It is not necessary to kill the rabbit, especially those rabbits that give a negative result as they may be used again at some future time. The ovary is usually examined grossly for corpora hemorrhagica and corpora lutea. Occasionally instead of waiting the forty-eight hours before examining the ovaries, the rabbit may be opened in twenty-four hours or earlier. If this is done, it is advisable to section the ovaries and examine a section through the corpora microscopically to determine whether or not there has been a hemorrhage into the follicles. The corpora hemorrhagica, in order that a positive diagnosis may be made, must be bright red in color, the so-called 'blood puncta" of the Germans. It must also be quite elevated. Whenever the corpora hemorrhagica appear black, that, of course, means an old hemorrhage into the follicle and must be disregarded as far as a positive diagnosis at the time the test is made. The negative results, of course, show neither the corpora hemorrhagica nor the corpora lutea upon examination. Usually in a positive test the tubes and bicornate uterus are quite injected, although this has no significance in the making of a positive diagnosis. The first specimens of blood serum were gathered from known pregnancies all giving positive reactions. In the series that followed, suspected pregnancies of various types, as well as pathological pregnancies, were examined. After all, the basis for a positive diagnosis should be the presence of living placental tissue. Therefore, ectopic pregnancies prior to rupture will give a positive diagnosis, while a missed abortion has given us one hundred per cent of negative diagnosis.

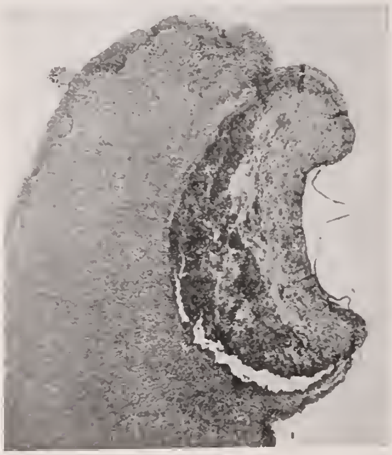


Figure 3: Section taken from the ovary shows a Graafian follicle that has ruptured and discharged the follicular liquid. The base of the follicle has filled in with blood, while the surface has contracted forming a typical corpus hemorrhagicum, and is easily seen macroscopically on ovaries giving a positive reaction to the test.

In our series of one hundred cases we have made an error in diagnosis in two instances. In both of these cases a negative diagnosis was made instead of a positive one, which was later proven by clinical observation and delivery of full term foetuses. In both of these instances we examined the animal at the end of the twenty-four hour interval and examined the ovaries grossly. However, if microscopical sections of these ovaries had been made at the time, very likely a positive diagnosis would have been possible. Numerous tests were run on the blood of a patient with a hydatidiform mole which gave a positive reading. These tests were done over a number of weeks time after the patient had expelled grape-like vesicles on numerous occasions. After the patient was curetted and symptoms of the mole had disappeared, another test was run which gave a negative reaction. The patient has had no subsequent symptoms referable to a chorio-epithlioma.

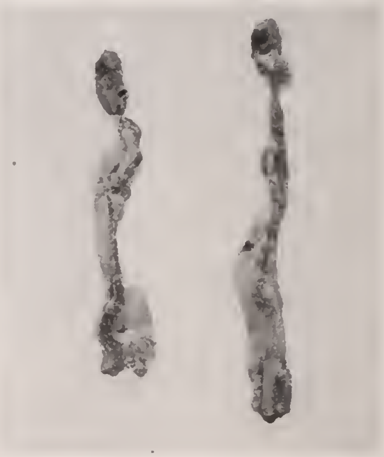


Figure 4: Gross appearance of right and left ovaries of a sexually mature virgin female rabbit 48 hours after injection of 2.5 cc. of patient's serum. This is a typical reaction showing both corpora lutea and corpora hemorrhagica in each ovary. The raised circular darkened area represent the corpora hemorrhagica, while the lighter represent the corpora lutea. On photographing the corpora hemorrhagica appear black, however in a positive test they appear as bright red in color.

CONCLUSIONS

1. Tests for pregnancies have been tried for at least 3,000 years, but none have proven of practical value and reliable until the biological test was introduced by Ascheim and Zondek.

2. The biological tests have gained great popularity since their advent. Most of them are as

accurate as any test we have for medical laboratory diagnosis of today.

3. The biological tests are based on an increased presence of anterior pituitary hormone in blood of pregnant women or an elimination thereof in the urine, which when injected into a virgin experimental animal causes the formation of mature follicles, hemorrhage into the follicles and the presence of corpora lutea.

4. The Aschheim-Zondek in the hands of various experimenters has proven 98% accurate. The disadvantages of this test are, that immature mice are required, and that the ovaries must frequently be examined microscopically.

5. The advantages of the Friedman test over the Aschheim-Zondek tests are that only one test animal is required and the results may be determined after twenty-four to forty-eight hours by microscopic examination. The rabbit is much more sensitive to the reaction than the mouse or the rat.

6. The anterior pituitary hormone is more concentrated in the blood serum per unit of volume than in the urine, therefore, using blood serum instead of urine is more accurate.

7. The modified technique of the Friedman test as described by Brown is practical, accurate and economical.

8. The hormonal pregnancy tests are of great value in distinquishing either early or late pregnancy from other conditions. The greatest value is in detecting early pregnancy in cases in which continuation of the pregnant state would be dangerous to the physical well being of the patient.

9. The tests are of no less value in the differential diagnosis of early pregnancy, myomata and other uterine tumors, ectopic pregnancy, hydatidoform mole, chorioepithelioma, abortion, and functional amenorrhea.

(Note: Bibliography with Reprints.)

ALLERGIC MANIFESTATIONS OF THE SKIN*

L. J. OWEN, M. D.,
Lincoln, Nebr.

The most generally recognized form of skin allergy is the urticarial wheal. A large number of the laity recognize hives and the fact that injestion of food is the commonest cause. What most people do not recognize and a fact that is frequently overlooked by physicians is that most frequent allergens are the foods most usually eaten.

Urticaria is however but a single clinical example of the varied dermal response to sensitizing substances. For convenience in discussion, these reactions may be divided into two major types, the basis of grouping being etiological, rather than clinical or pathological, though there are certain histological features more prominent in one than in the other. There is also a serological differentiation that is quite clear cut.

1. In the first type we have essentially a dermal response and pathology which I shall for convenience arbitrarily designate the urticarial type.

2. The response and sensitization is essentially epi-dermal, and belongs to the venenata type of lesions.

In the first type sensitization is usually internal; injestion of food, the presence of drugs, or foci of infection. The allergen is blood borne and reaches the skin by way of the vascular system. The clinical picture varies widely. From simple erythema, we see the varied picture of papules, urticarial wheals, various stages of infiltration, and erythema to the point of vesiculation and epidermal break down, resulting in oozing, crusted surfaces. In the less acute non-vesiculating cases, severe erythema may continue to the development of varying grades of exfoliation dermatitis.

The essential pathology of this first type is an intercellular edema, and with a continuation of the irritant there follows leukocytic infiltration of the dermis showing usually a high percentage of eosinophiles, and some times consisting almost entirely of this type of cell. If the process continues beyond this the epidermis is involved, becomes spongy, shows parakeratosis and the development of vesicles seen clinically. In the absence of spongiosis, of the epiderm, varying degrees of hyperkeratosis result and tends toward the development of the dermatitis exfoliative type. It is in this first group of cases that high eosinophilic differential blood count is prone to occur.

A clinical feature of these cases is that the individual need not always display the same type of lesion in response to the same allergin. The threshold of sensitivity in a given case may vary, and in an originally less sensitive person the continuation of eating a certain food, or an increase to unusual amounts may intensify the reaction, changing a simple urticaria which fades in a few hours, to an intensely erythematous, vesicular, oozing and crusted dermatitis, or perhaps to the non vesicular, hyperkeratotic exfoliative dermatitis.

---

*Read before the Lancaster County Medical Society, Lincoln, October, 1933.

Example: Woman, age 22. First seen with an almost generalized hyper-acute, oozing, burning, itching dermatitis, of three weeks duration. That is, progressive during that period. She cleared rapidly under starvation diet, and pork was later determined as the allergin. Two months later, eating of a pork steak brought her into my office within about five hours, with a profuse urticaria of face, neck and arms. Only a small area on the right upper arm developed vesiculation. She was seen in two subsequent urticarial attacks which were checked without vesicular breakdown.

Woman, age 50. When first seen, presented palmar keratosis with moderate amount of fissuring. There was sufficient deep reddish erythema of forearms to indicate more than an occupational roughness of palms. In the course of about six weeks this patient developed a generalized typical dermatitis exfoliativa. With hospital care and a very restricted diet, she improved slightly. After a few days wheat was removed from diet, resulting in a rapid relief from itching and gradual clearing of skin condition in about two tothree weeks. She returned home and her condition has been variable since. Members of the family informed me that she eats wheat bread between meals when she thinks she is not under observation. This women will probably commit suicide with wheat just as some diabetics do with sugar.

The skin response to an internally acting allergin need not be generalized. Often sharply localized areas only show reaction, even when passive transfer by serum injection to another person's skin is positive. A common example of this localization is the eruption confined to the face in infants sensitive to cows milk.

The idea that an allergen acting through blood stream distribution must be of protein nature was long held, but is apparently disproved by the frequency with which we see skins sensitized by non protein substances. The arsenical rashes present instances of this. An explanation attempting to correlate this apparent conflict of theory and observation is that the non-protein irritant combines with tissue protein to form a different and allergic protein compound.

The second type mentioned in which epidermal allergic response predominates, includes the dermatitis venenatae, and occupational dermatoses. Here the allergen is not blood borne, but reaches the epidermis first by skin surface contact. These cases are for the most part characterized by their transient duration, origin at and limitation to the area exposed to the irritant. Here again the clinical variation is wide. Instances vary from a mild erythema, or slightly scaly and infiltrated area to the intense edema and coelescing vesicles of a severe ivy dermatitis.

The clinical appearance frequently gives no clue as to causative agent. The application of tincture of iodine may produce a skin picture indistinguishable from rhus dermatitis. We commonly speak of skin irritants in this class of cases but in dilutions usually met with they are not irritating to the average skin nor in most instance to the patient on first contact, especially in the occupational dermatoses. After varying periods of contact the epidermis becomes sensitized to the specific substance. Here we see epidermal thickening, and moderate erythema at first and with continued contact edema involving the dermis, parakeratosis, hyperkeratosis and vesiculation. At this stage of the pathological development leucocytic infiltration and epidermal breakdown appear and the clinical picture of a severe venenata or occupational dermatitis and food protein, or urticarial group, becomes impossible to distinguish. Both, cases of acute oozing eczema if you will.

The infiltration in the pure venenata type is not so markedly eosinophilic, and it is in this type of allergy that the blood differential is not so characteristic, as regards eosinophilia, which is in fact frequently absent. Another serological differentiation that is useful is that the passive transfer by intra-dermal serum injection frequently positive in the urticarial type of allergy is in the venenata type almost universally negative.

Example: Man, age 40. Dairy worker. Acute vesiculating, oozing and crusted dermatitis of hands and forearms with some occurrence on face and neck. Duration about four months with recurrent periods of exacerbation. Many skin food tests done before I saw him and about thirty foods including eggs, milk, wheat and beef ordered out of his diet. I made patch tests of three soaps and water softeners used in washing milk cans; dilution that was used in the wash tanks. The type of rash he had been having was reproduced on upper arm from a soap powder. Elimination of this soap from use, and return to a full dietary resulted in complete relief.

Example: Man, age 46. Baker. Sensitization to wheat flour, duration about three years, and the skin keratotic, fissured, oozing. It would take a week or more away from his work to get any appreciable healing. The very interesting thing about this case was that his hands remained in fairly good condition while working in wheat during two months that he remained on a strictly wheat free diet. Eating of wheat bread while at work brought on an attack. Wheat diet did not cause erruption of hands when not handling wheat flour.

Response to multiple allergens is common. Many patients are found sensitized to several foods. It is just as true that an individual may respond to both the food allergic type and venenata type, and the differentation of these two is by no means a simple job clinically. The occurrence of a venenata may precipitate in that person an urticarial type of dermatitis.

Woman, age 60, presented a typical rhus dermatitis of lower leg with a definitely known exposure and response. Instead of the usual comparatively transient duration and localization characteristic of venenata, after 10 days there was wide spread occurance of erythematous vesicular rash with essentially the characteristic of the plant poisoning on the lower leg. Dietary restriction brought relief of itching and burning and patient proven positive to egg. A potential egg allergy precipitated by external chemical irritation.

The skin is probably the greatest anti-body producing organ of the body and plays an important role in production of antitoxins in bacterial infections, and thus it is not surprising that it should be so frequently involved in allergic reactions when symptomatically located in other organs. This is the reason for the frequent value of skin test in allergic conditions such as migraine, hayfever, asthma, colitis, etc. The principal skin tests are intra-dermal injection, epidermal scratch and patch test, each with its adherants and opponents and much discussion as to relative value. The truth is that each may be valuable in certain cases. The injection method has been condemned as liable to produce general reaction, but when this occurs, quite often doses ten to a hundred times more than necessary have probably been used. This error also produces too many false positives. The scratch test produces a greater number of false negatives than does the intradermal injection, but is less liable to produce a false positive. It is easy for the inexperienced to read many false positives from either of them.

In the occupational dermatoses and venenata type where practical to apply, the patch test is frequently preferable because of duration of application and imitation of clinical conditions. Here it is epidermal sensitization we are testing for.

Another phase of skin allergic manifestations is seen in relation to mycotic infections. Some instances of foot infection present also vesicular rash of the hands, with positive microscopic findings from the feet, and intensive search shows only sterile fluid in the hand vesicles. These are the phytid rashes in response to the presence of trichophytic toxins circulating in the blood stream, and are allergic responses. It is possible in some patients to reproduce these rashes with intra dermal injections of mycotic extracts, and when so produced, can not be differentiated from actual infection clinically. In these cases the allergins are blood borne and as such these cases belong to the urticarial type in my arbitrary grouping.

CLINICAL PATHOLOGICAL CASE REPORTS*

FLOYD L. ROGERS, M. D., and J. MARSHALL NEELY, M. D.,
Lincoln, Nebraska.

CASE REPORT

G. A., aged 39, an Italian male, train inspector, admitted to the hospital on June 29, 1933. He had been complaining of headache, dizziness, ringing in the ears, perversion of smell, absence of taste, weakness, polydipsia, polyuria and bleeding hemorrhoids. The patient dated the onset of his trouble back five months at which time he fell over a hose, striking his forehead on the pavement. He was unconscious for a short period of time. Since that time the above complaints had manifest themselves and become progressively worse.

The headache was constant and was noticed in particular about the occipital region. The periods of dizziness came on at irregular times and at times were so marked that he fell in a faint without any exciting cause. Since the time of his fall he had noticed a ringing in his ears. This varied and at times was very troublesome. On one occasion, during the night, he was so certain there were owls in the house that he got up and searched for them. He had a sense of the odor of tobacco smoke almost constantly since the time of his fall. For ten years he had not been able to taste food. This had not changed since the accident. He had been weak since the accident and had noticed this mostly about the knees. There had been a marked increase in thirst. He drank almost constantly, voided very frequently, and later had to get up at night to pass the urine as many as twenty times. He had always been constipated and when constipated there was a tendency for him to have hemorrhoids which bled. Since the time of his accident he saw double much of the time. His appetite was fairly good with the exception of various times when he was troubled with nausea and vomiting. His hands had a tendency to tremble for many years. Since the time of his injury he had noticed a marked increase in desire for sexual intercourse.

He had no important illnesses in the past.

Physical examination revealed a well nourished, middle aged, Italian male. He was perspiring freely, apparently not in pain; he had a peculiar staring expression about the eyes. The pupils reacted to light and accommodation. Vision in the right eye was greatly decreased. The disc outline had completely disappeared, the vessels running into the disc were almost completely obliterated. The veins were dilated near the periphery. There were similar although less marked changes in the left eye. Examination of the nose revealed no abnormalities except considerable hypertrophy of the right middle turbinate. The ears presented nothing abnormal. The teeth appeared to be in good condition with the exception of one which was badly decayed. The tonsils were large and red. The chest was funnel-shaped; expansion good; pulmonary areas were resonant throughout and an occasional rale was heard in the region of the right apex. The heart was normal in size. The heart tones were normal. The abdomen was rather full. The colon was distended. The liver extended about 2 cm. below the costal margin, its edge was soft, not tender and was smooth. There was some tenderness in the region of the left kidney. Neither kidney could be palpated. The spleen was not palpable and the recti muscles were soft. Rectal examination revealed no abnormalities. The fingers had a very marked tremor which was noticed most on the right side. When the patient stood it was noticed that his knees were weak and had a tendency to give way after he stood a few moments. The tendon reflexes were normal. No Babinsky, Oppenheim, Gordon nor Rhomberg.

---

*From the Lancaster County Hospitals Pathological Laboratory.

The urine had a specific gravity of 1.005, acid reaction, no albumin, no sugar, no casts, an occasional white blood cell. White cell count was 7,200. A spinal puncture was done on January 30. The fluid findings at the time of the puncture were not recorded. The cell count was 4; sugar, 1 plus; globulin, negative; Wassermann, negative; colloidal gold, luetic curve.

X-ray examination of the head showed a moth eaten rarification of the posterior portion of the body of the sphenoid bone and the posterior clinoid processes. Both antra were dark. The right frontal was absent, the left was cloudy. The ethmoids were cloudy.

The patient was operated on February 2. A flap was made in the right temporal frontal region. In turning down this flap the dura was found to be loose and there was but little pulsation of the brain. In lifting the frontal lobe there was found to be a large amount of soft, mushy, necrotic appearing tissue throughout this lobe. A partial frontal lobectomy was done with electric cautery. The dura was closed and the flap replaced. The patient did not regain consciousness and died fifteen hours after the operation.

ABSTRACT OF NECROPSY

Mr. G. A.: The body is that of a white adult male measuring 160 cm. in length, estimated weight, 155 pounds. Systematic examination of the abdominal and thoracic viscera show practically nothing of importance. There is a terminal hypostatic pneumonia, bilateral and there are a few fibrous tags on the lateral surface of the right lung, near the apex.

Examination of the head revealed a recent operative scar on the right side of the head, the incision beginning in front and above the ear and rising upward and forward to the mid-line of the brow. Under this there is a bony flap of a similar size. There is some hemorrhage under the scalp on the operative side together with some edema. Otherwise the scalp and calvarium are not remarkable. The left half of the dura is apparently normal. The veins on the right side under the dura are large and dark blue. Under the bony flap there are some blood clots lying on the dura. There is a deficiency in the dura apparently where the drain was situated. About the anterior third of the right frontal lobe is a pulpy mass consisting of blood clot and yellowish brown tumor tissue. The tumor has invaded the opposite frontal lobe just anterior and inferior to the corpus collosum. The ventricles are dilated. Further examination of the base of the skull after stripping of the dura shows the anterior and inferior clinoid processes to be erroded. The anterior fourth of the sella turcica is erroded. The sella, appears somewhat shallow and wide. The pituitary gland appears to be flattened. There is no apparent destruction of the optic chiasm. The ethmoid cells are filled with fluid containing flakes of creamy pus, and the mucous membrane is polypoid in character. The right ethmoid is represented by one very small cell not involved. Both mastoid processes are the seat of a chronic infection. The cell walls are broken down and filled with a brown, necrotic material. On the left side a few flakes of creamy pus and a sequestrum are found.

ANATOMICAL LESIONS:

Recent surgical exploration of right frontal area; tumor, apparently glioma of right frontal lobe with secondary involvement of the left frontal lobe; erosion of the sella turcica, apparently by pressure; chronic bilateral ethmoidal sinusitis; chronic bilateral mastoiditis; beginning broncho-pneumonia.

MICROSCOPIC:

Sections of the brain neoplasm shows it to be made up of varying sized and shaped cells, medium in size with a distinct tendency to arrangement in bands and whorls. There is considerable hemorrhagic infiltration in the tumor tissue. The tumor is quite vascular but in no area is there seen any definite "feet" attacked to the vessel wall. For the most part the cells are spindle shaped and the nuclei are elongated, quite dark staining and projections of the cytoplasm at both ends of the cells are seen. Considerable hemosiderin deposit eixsts in the tumor. No typical astrocutes or neuroblasts are seen.

This tumor represents a spongioblastoma multiforme, one of the most common types of tumor found, arising in the brain.

The political medicine-men, however, will hold to their faith in Quacknocracy.—Norfolk Virginian-Pilot.

COUNCILOR ANNUAL MEETING

JANUARY 15, 1934

The annual meeting of the Councilors was held at the Conant Hotel in Omaha, January 15, 1934, at 2:00 p. m. The meeting was called to order by Dr. Bryson. The following members of the Council were present: Drs. Overgaard, Lehnhoff, Boyer, Brush, Bryson, Rork, Selby, Cooper, Davis, King, Potter, Douglas, retiring President and Councilor Cook, President Sachs, and President-elect Bixby. In addition to these the following guests were also present: Dr. R. B. Adams, Secretary-Treasurer; Dr. K. S. J. Hohlen, of the Campaign Committee; Dr. Morris Nielsen, of the Redistricting Committee; Dr. B. F. Bailey, Chairman of the Committee on Legislation; Dr. R. W. Fouts, chairman of the Medico-Legal Advisory Committee; Dr. Herman M. Jahr, Secretary of the Omaha-Doublas County Medical Society; Dr. F. W. Heagey, member of the Emergency Relief Committee in the State of Nebraska, Dr. F. A. Long, Chairman of the Publication Board; Dr. A. F. Tyler, member of the Publication Board; Dr. J. F. Kelly and Dr. Earl Sage.

Dr. Boyer was elected President and Dr. Overgaard re-elected Secretary of the Council for the ensuing year. The regular order of business was then taken up.

Dr. Bryson retired from the chair and Dr. Boyer took the chair.

Inasmuch as the minutes of the last meeting of the Council had been published in the Journal a motion was made that the reading of these minutes be dispensed with and that they be approved as published. Seconded and carried.

The Secretary's report was read by Secretary Adams. A motion was made that the report of the Secretary be received and that a committee of three be appointed by the chair to audit the accounts. The report of this committee to be presented at a later time during this meeting. Seconded and carried.

Dr. Boyer appointed Drs. Selby, King and Davis as the auditing committee.

The report of the Student Loan Fund Committee was read by Dr. Overgaard. A motion was made that this report be received and referred to the auditing committee. Seconded and carried.

The report of Dr. Welch on Medical Education and Hospitals was read by Secretary Overgaard. A motion was made that this report be received and placed on file. Seconded and carried.

The report of the Insurance Committee was read by Dr. Selby. A motion was made that this report be received and placed on file. Seconded and carried.

An amendment to the above motion was made as follows: That this report of the Insurance Committee should be published in the Journal. Seconded and carried.

The report of the Medico-Legal Advisory Committee was read by Dr. Fouts. A motion was made that this report of the Medico-Legal Advisory Committee be received and placed on file and that Dr. Fouts be given a vote of thanks for his efforts. Seconded and carried.

A motion was made by Dr. Overgaard that the Medico-Legal Advisory Committee be authorized to pay $50.00 as attorney's fees out of the Medico-Legal Funds for the Moore case in favor of Dr. I. S. Trostler of Chicago. Seconded and carried.

The report of the Committee on the Re-districting of the State was given by Dr. Nielsen. A motion was made by Dr. Davis that this report be received and referred to the House of Delegates at the next session. Seconded and carried.

The remainder of Dr. Adams' report as Secretary in regard to Federal Medical Aid was read by Dr. Adams.

The report of the Committee on Public Policy and Legislation was given by Dr. Bailey. A motion was made by Dr. Selby that this report be received and placed on file. Seconded and carried.

The matter of Federal Medical Aid was discussed by Dr. Heagey. A motion was made that the Council extend a vote of thanks to Dr. Heagey for his intelligent discussion of this matter and that they then stand adjourned for fifteen or twenty minutes. Seconded and carried.

The meeting was again called to order at 5:00 o'clock by Dr. Boyer.

The Auditing Committee reported that it found the Secretary-Treasurer's report and the report of the Student Loan Fund Committee correct and recommended that the reports be received. Motion was made that this report be received and published in the Journal. Seconded and carried.

A motion was made that the Secretary be instructed to inquire about the cost of hiring a certified auditor to audit the books of the Nebraska State Medical Association and be ready to give this report at the next meeting of the Council in the spring. Seconded and carried.

A motion was made by Dr. Douglas that the matter of Federal Medical Aid be discussed by the Councilors, individually representing each district as called on by the chair, this to be followed by any others present who care to discuss the matter. Seconded and carried.

A report of the Campaign Committee was given by Dr. Hohlen. A motion was made that this report be received and placed on file. Seconded and carried.

The matter of Federal Medical Aid was then discussed by the following: 1st Councilor District—Dr. A. P. Overgaard; 2nd Councilor District—Dr. H. J. Lehnhoff; 3rd Councilor District—Dr. W. R. Boyer; 4th Councilor District—Dr. E. L. Brush; 5th Councilor District—Dr. Homer Davis; and 6th Councilor District—Dr. D. D. King.

A motion was made that the Council adjourn until after dinner.

EVENING SESSION OF COUNCILOR MEETING
JANUARY 15, 1934

The meeting was called to order by President Boyer. All members of the Council attending the afternoon session and all guests were present. In addition Mr. Gene Huse of the Huse Publishing Company was also present.

The discussion of the Federal Medical Aid was resumed.

A motion was made by Dr. Selby that these discussions be limited to five minutes and that he recommend to the chair that the President, Past-President and President-elect, being members of the Council, be allowed in the individual discussion. Seconded and carried.

A motion was made by Dr. Potter that the Council of the Nebraska State Medical Association now in session recommend to Governor Bryan that Dr. W. R. Boyer be re-appointed on the State Board of Medical Examiners. This motion was seconded by Dr. Bailey and was unanimously carried.

The matter of Federal Medical Aid was discussed by the following Councilors: 7th District—Dr. H. E. Potter; 8th District—Dr. W. J. Douglas; 9th District—Dr. R. D. Bryson; 10th District—Dr. L. W. Rork; 11th District—Dr. C. A. Selby and 12th District—Dr. A. L. Cooper. Dr. A. E. Cook, Past-President, Dr. Adolph Sachs, President, Dr. Jos. Bixby, President-elect and Dr. R. W. Fouts, Chairman of the Medical Economics Committee also discussed Federal Medical Aid.

After further general discussion the following motion was made: That the Council in session, approve of the offer of the Federal Government for Medical Aid for the care of the unemployed indigent poor and that they hereby authorize the President of the Nebraska State Medical Association to appoint a proper Committee and arrange for a proper set-up in accordance with the rules of the Federal Relief Administrator. Seconded and carried, unanimously.

Dr. Sachs then announced the formal appointment of the Committee on Public Policy and Legislation as a standing special Committee mentioned in the above motion.

The report of the Publication Committee was then given by Dr. Long. A motion was made that this report be received and that a standing vote of thanks be given Dr. Long and the Journal Committee for their efforts in carrying the Journal through for this past year. Seconded and carried.

A motion was made that Dr. Bailey's report on Federal Medical Aid be received and placed on file. Seconded and carried.

A motion was made that the Council extend to the Conant Hotel and to Dr. A. P. Overgaard, Secretary of the Council a vote of sincere thanks for the splendid way in which the meeting of the Council was taken care of. Seconded and carried.

A motion was made that the Council adjourn. Seconded and carried.

SECRETARY'S REPORT
January 15, 1934

The year 1933 just ended has been a strenuous one, and one of close figuring and cutting of corners. We finished the year with a membership of 1049, which was 33 less than in 1932. We had 111 delinquent members, 40 reinstated and 54 new members. There were also 10 of the members who died during the year.

This was a Legislative year and the State Legislature caused much worry and work on the part of our two Committees who do this work. Details will be contained in their respective reports.

Letters were sent to delinquent and eligible non-members as usual. In fact more effort was placed here than in former years.

Financially the Association finished the year in good shape in two of its departments.

The Defense Fund had a balance of $1,295.64 on hand and it was not necessary to withdraw any of its investments. The General Fund began the year with $126.94 on hand. In order to function while dues were coming in $984.23 was withdrawn from our investments. We received $5,835.00 as income, $2,597.50 of this was transferred to the Journal and Defense Funds and $3,337.20 was disbursed in general expenditures. This made our total expense of 1933 in this fund $5,934.70. Subtracting this amount from our income leaves us with $1,011.47 on hand December 31, 1933. In other words this fund spent $99.70 more than was obtained from current income.

The Journal Fund is the cause of concern to the Secretary. This fund began the year with $75.77 on hand. In order to function until the incoming dues came in in sufficient amounts $985.42 was withdrawn from investments. $2,722.99 was received from advertisements and $1,558.50 from dues, making a total of $4,281.49. This fund spent $5,188.46 during the year. This makes an expenditure of $906.97 over and above income. This was taken care of by withdrawals from investments and money on hand at the beginning of the year, leaving a balance on hand December 31, 1933, of $154.22. Due to the fact that withdrawals from investments have been made over two or three years and due to the fact that these withdrawals must come from Building and Loan Associations, it is becoming more difficult to get money in sufficient amounts. Each withdrawal reduces the principal left and these Associations are getting more rigid in allowing withdrawals.

—R. B. Adams, Secretary-Treasurer.

FINANCIAL STATEMENT 1933 MEDICAL STUDENT LOAN FUND

RECEIPTS

January 1, Cash on Hand	$ 92.25	
January 27, Student Loan No. 4 paid interest	6.00	
February 15, Student Loan No. 5 paid interest	6.00	
June 2, Woman's Auxiliary Omaha Douglas County Med. Society	100.00	
August 31, Student Loan No. 5 paid interest	6.00	
September 5, Woman's Auxiliary Dodge County Medical Society	10.00	
December 16, Student Loan No. 3 paid interest	12.00	
		$232.25

DISBURSEMENTS

January 27, Student Loan No. 4	$ 80.00	
October 1, Student Loan No. 6	100.00	
		$180.00
January 1, 1934 Balance on Hand		$ 52.25

Committee—F. A. LONG,
H. J. LEHNHOFF,
A. P. OVERGAARD.

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1933 to December 31, 1933

Cash Receipts:		
Membership Dues	$5,835.00	
Withdrawals:		
Omaha Bldg. and Loan	331.30	
Conservative Sav. and Loan	652.93	
Total Cash Receipts		$6,819.23
Cash Transferred to other Funds:		
Journal Fund	$1,558.50	
Defense Fund	1,039.00	
Total Cash Transferred		$2,597.50
Balance Available for General Fund		$4.221.73
Cash on Hand January 1, 1933		126.94
		$4,348.67
Cash Disbursements:		
Salaries—R. B. Adams		$ 600.00
Office and Administrative Expense:		
Rent	$ 180.00	
Telephone	91.13	
Printing	46.26	
Bank Charge	4.50	
Government Check Charge	2.60	
Stamps	102.00	
Secretary of State	1.00	
Insurance Premium	5.00	
American Medical Assn. membership cards	10.00	
Dr. F. A. Long (expense)	95.05	
Madison News (Dr. Long for stationery)	9.25	
Star Mail Pub. Co. (Dr. Long for envelopes and proof slips)	4.75	
		$ 551.54
Miscellaneous Expense:		
Councilor Expense	$ 340.85	
Huse Publishing Company—programs	52.50	
Program Committee	15.00	
Speakers at Meeting	195.81	
Campaign Committee	150.00	
Legislative Committee	21.20	
Presidential Expense	79.30	
State Fair Committee	300.00	
Flowers (Mitchell, Davis & Sayre)	25.00	
Miss Runge (expense at meeting)	10.00	
L. C. Smith Typewriter Co., new typewriter for Dr. Long	90.00	
All make Typewriter Co. (rent)	1.50	
		$1.281.16
Convention Expense:		
R. W. Fouts	$ 33.59	
B. F. Bailey	37.97	
J. Stanley Welch	55.94	
Alice Cary Gilchrest	132.00	
		$ 259.50
Rebate on Dues	$ 645.00	
		$ 645.00
Total Disbursements for Year 1933		$3.337.20
Balance Cash on Hand December 31, 1933		$1.011.47

GENERAL FUND

STATEMENT OF INVESTMENTS

January 1, 1933 to December 31, 1933

Investments on Hand January 1, 1933:		
Cash Held by Omaha National Bank	$ 259.81	
Securities Held by Omaha National Bank	4,770.00	
		$5,029.81
Balance in Account—Nebraska Central Bldg. & Loan	$1,914.42	
Balance in Account—Omaha Bldg. & Loan Assn.	1,656.56	
Balance in Account—Conservative Savings & Loan	3,264.65	
Balance in Account—United Savings & Loan Assn.	1,157.29	
		$7,992.91
		$13,022.72
Additions to Investments During Year 1933:		
By: Interest Credits—Omaha National Bank	$ 63.66	
Dividend Credits—Omaha Bldg. & Loan Assn.	32.04	
Dividend Credits — Conservative Sav. & Loan	105.48	
Investment — Omaha National Bank	250.00	
		$ 451.18
		$13,473.90
Withdrawals During Year 1933:		
Omaha Bldg. & Loan Assn. 20%	$ 331.30	
Conservative Savings & Loan Assn. 20%	652.93	
Total Transferred to Checking Fund Account	$ 984.23	
Trustee Fee	10.00	
Accrued Interest on Bond	2.83	
Purchase $250.00 Liberty Bond at 102	257.86	
	$1.254.92	
		$12,218.98
Investment on Hand January 1, 1934		$12,218.98
Represented by:		
Cash Held by Omaha National Bank	$ 52.78	
Securities Held by Omaha National Bank	5,020.00	
		$5,072.78
Balance in Account—Omaha Bldg. & Loan Assn.	$1,357.29	
Balance in Account — Conservative Savings & Loan Assn.	2,717.20	
Balance in Account — Nebraska Central Bldg. & Loan	1,914.42	
Balance in Account—United Savings & Loan Assn.	1,157.29	
		$12,218.98

DEFENSE FUND

Cash Receipts:		
Share Dues Received from General Fund	$1,039.00	
Cash on Hand January 1, 1933	1,496.34	
		$2,535.34
Cash Disbursements:		
R. W. Fouts, Salary	$ 600.00	
Attorney Fee:		
Shotwell, Mousky, Grodinsky & Vance (Alcorn vs. Glendale Mortuary and John Baptist)	150.00	
Harlan Bryant (Svoboda vs. Drs. Way & Lathrop)	100.00	
Fred N. Hellner (L. O. Pfeiffer)	87.35	
Rosewater, Mecham & Hasselquist (Henry Nagel vs. Dunham)	175.00	
		$1,112.35
R. W. Fouts, Expense	$ 127.01	
Government Check Charge	.34	
		$ 127.35
Total Cash Disbursements		$1,239.70
Balance on Hand December 31, 1933		$1,295.64

DEFENSE FUND

January 1, 1933 to December 31, 1933

Investments on Hand January 1, 1933:		
Cash Held by Omaha National Bank	$ 219.43	
Securities Held by Omaha National Bank	5,000.00	
Balance in Account—United Savings & Loan	1,157.29	
Total January 1, 1933		$6,376.72
Interest Credited During Year:		
Omaha National Bank	$ 213.26	
Addition to Investments:		
Fourth Liberty Bond, bought at 102, (value $300.00)	$ 300.00	
		$6,889.98
Cash Transferred:		
Investment—Omaha National Bank	$ 309.45	
Trustees Fee for Year	10.00	
Interest Accrued	3.40	
Exchange of Bonds (Postage and Insurance)	.20	$ 323.05
Investments on Hand January 1, 1934		$6,566.93
Represented by:		
Cash Held by Omaha National Bank	$ 109.64	
Securities Held by Omaha National Bank	5,300.00	
Balance in Account—United Sav. and Loan	1,157.29	
		$6,566.93

JOURNAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1933 to December 31, 1933 as Compared to January 1, 1932 to December 31, 1932

Direct Journal Receipts:	1933	1932
Advertising Space	$2,545.50	$3,766.48
Cuts	51.58	111.48
Copies Sold	6.50	28.19
Subscriptions to Journal	12.50	14.50
Dividend—Cooperative Adv. Agency	106.91	223.38
Total Direct Receipts	$2,722.99	$4,144.03
Share Dues Received—General Fund	1,558.50	1,606.50
Withdrawal:		
Omaha Bldg. and Loan Assn.	$ 478.04	$ 332.09
Union Savings and Loan Assn.	193.32	210.69
Standard Savings and Loan	60.88	64.08

Omaha Nat'l Co.—$200 Liberty Bond Plus Interest	253.18	
	$ 985.42	$ 607.86
Total Receipts—All Sources	$5,266.91	$6,358.39
Direct Journal Disbursements:		
Salaries:		
Dr. F. A. Long	$1,200.00	$1,200.00
Dr. R. B. Adams		1,300.00
Rosa Runge	900.00	
	$2,100	$2,500.00
Publication Expense:		
Huse Publishing Co.	$2,889.44	$3,909.64
Baker Brothers Eng. Company	151.15	373.73
Bank Charge	4.75	1.23
Government Tax Charge	1.12	.52
Universal Press Clipping Bureau	42.00	42.00
	$3,088.46	$4,327.12
Total Direct Disbursements	$5,188.46	$7,247.56
Excess Disbursements Over Cash		$ 468.73
Excess Cash Over Disbursements	$ 78.45	
Cash on Hand January 1	75.77	544.50
Total Cash on Hand	154.22	75.77

JOURNAL FUND

STATEMENT OF INVESTEMENTS

January 1, 1933 to December 31, 1933

Investments on Hand January 1, 1933:			
Balance in Account—Omaha Loan and Bldg. Assn.			$2,523.05
Balance in Account—Standard Savings and Loan			1,217.59
Balance in Account—Union Loan and Savings			1,963.22
Balance in Account—United Savings and Loan			1,140.19
Balance in Account—Omaha National Bank:			
Investments	$600.00		
Cash on Hand	43.68		643.68
			$7,487.73
Additions to Investments During Year:			
Represented by:			
Dividend Credit—Union Savings and Loan:			
July 1, 1933	$ 17.85		
December 31, 1933	17.67		35.52
Dividend Credit—Omaha Loan and Bldg. Assn.:			
July 1, 1933	$ 30.57		
December 31, 1933	31.04		61.61
Government Bonds — Omaha National Bank:			
Interest During 1933			17.82
			$7,602.68
Cash Transferred:			
$200 Fourth Libertys Sold at 103½	$207.00		
Interest	46.18	$253.18	
Withdrawals:			
Omaha Loan & Bldg. Assn.	$478.04		
Union Loan and Savings Assn.	193.32		
Standard Savings and Loan Assn.	60.88	732.24	
			$6,617.26
Total Dividend Credits During Year and Interest			$ 114.95
Total Amount Transferred to Journal Fund Checking Account			985.42
Investments on Hand January 1, 1934:			
Balance in Account—Omaha Loan and Bldg. Assn.			$2,099.62
Balance in Account—Standard Savings and Loan Assn.			1,156.71
Balance in Account—Union Loan and Savings Assn.			1,805.42
Balance in Account—United Savings and Loan Assn.			1,140.19
Balance in Account—Omaha National Bank:			
Investments	$400.00		
Cash on Hand	15.32		415.32
			$6,617.26

1933 REPORT OF THE INSURANCE COMMITTEE

Your Insurance Committee during the past year has had but little opportunity to be of material service to the association and its membership due to the fact that the status of insurance matters, since the discontinuance of the Group Insurance, has reverted to the same level as it occupied prior to the Group policy seven years ago.

Since the cancellation of Group Insurance the average premium costs of malpractice insurance have doubled and in many individual cases have more than trebled.

There has come to the notice of your committee that cancellations have occurred during the past year in cases of individuals who have recently been sued for malpractice and considered by the insuring company to be hazardous risks, also cancellation in a given community has been resorted to by a company which maintained that the condition in the locality relating to the medical profession, and the legal profession, allegedly resulted in a prevalence of malpractice lawsuits in that vicinity.

It has been our observation that there has been an appreciable tightening of the basic requirements to procure insurance against malpractice, which, on the one hand may act as a deterrent to those within the profession who would incite a lawsuit, but which on the other, works an undue hardship upon all others in preventing the procuring of good insurance at reasonable rates, and in falling heir to the retailiatory dictates of some companies and agencies writing such insurance.

Your committee can offer no solution to the insurance problem other than to urge the constant vigilance within our own ranks to the end that there be cultivated a more prevalent spirit of mutual helpfulness among those in the profession, and thereby create a greater forbearance at being hypercritical of the other fellow, his work, and the results obtained by him.

It is the opinion of your committee that a well directed effort should be made through the proper channels of the association to cause the discontinuance of the present practice in court procedures allowing the defendant in any given liability lawsuit to be questioned as to whether or not he carries insurance covering such liability, the above procedure as now practiced is definitely and distinctly damaging, often times causing juries to award verdicts and damages without consideration as to the merits of the case at bar, and no doubt contributes to a large degree to the high cost of malpractice insurance in Nebraska.

For some reason there has been an abatement in the number of malpractice lawsuits filed in 1933, which for lack of better reasons, we are led to believe is due to the concerted efforts being put forth in our association through this and other committees; assuming such to be the case, we cannot afford to relax in our efforts and all of us should be spurred on to a constant, tactful and unrelenting offensive against all things that lead to malpractice court actions, thus tending to stabilize and lower the costs of malpractice insurance.

Respectfully submitted,
C. A. Selby, Chairman,
Morris Nielsen,
Robert D. Schrock.

FEDERAL MEDICAL AID TO THE INDIGENT

During the secretary's illness of August and September, 1933, the matter of Medical Aid to the Indigent apparently came to prominence. Your secretary found material to this effect on his desk when he returned to work about October 1st. He then sent thirty letters over the state to members, selecting them so as to get a general survey. In these letters he asked that the matter be discussed with members and county societies wherever possible. These letters, of course, caused a necessary delay. In fact it was at least a month before enough answers to them had been received to be of use as a guide. The opinions in these answers were so diversified that it was impossible to come to a decision as to whether the association wanted this aid for its members or not. While waiting for the answers your secretary had a conference with both the federal and state relief directors. At this time he was told that the amount of federal money alloted to a state was based on the amount that the state had appropriated, and that since Nebraska in its entirety had appropriated such a small amount, there was very little from the federal fund. In fact the amount obtained from the federal fund was so small that it could only be used for food, clothing, fuel and habitation. The state director said that if a need developed an effort could be made to get federal money for medical aid.

Your secretary also during this period wrote Indiana and Illinois for all the information they could furnish. About November 1, 1933, word was sent to the association office that the federal relief director had made the statement that there was money that could be used. I called him and he verified this statement. I then conferred with the state director and he again said there was no money and that before we could get any we would have to furnish an acceptable fee schedule and an estimate of the total cost of this work. This to me seemed impossible. I, however, wrote Indiana, Illinois and the American Medical Association for suggestions. Indiana and Illinois answered to the effect that this demand had not been made on them and that the demand was unreasonable. The American Medical Association wrote to the effect that we were the only state on whom this demand had been made. After receiving this information I again met the state director in the office of the state health director. He again stated that he would have to have an estimate of the total cost in order to tell how much money to ask for. He also again said that regardless of the federal relief director's opinion the fact remained that there was no money for medical aid, and that if we would furnish a fee schedule and an estimate of the total cost he would try to get some. At this meeting we finally got him to give up the total cost estimate, but he then stated that he wanted a list showing him the number of calls a doctor would reasonably make on any and all diseases. This again took time to get around.

During this time this office again sent letters to the councilors and asked for their opinion as to a special meeting. Your president also did this and again in both cases opinions varied so that it was impossible to tell what to do. Finally, after several telephone conversations with the president, it was decided to call a meeting of the Committe on Public Policy and Legislation and let them work out the fee schedule. This meeting was held December 14th, 1933, and a fee schedule was agreed upon. The chairman of the committee and the secretary were instructed to present this fee schedule to the federal director. This was done immediately. He looked it over and promised to get in touch with the state director and then let us know.

We have also been told by both directors that we must furnish a plan that would enable the state, county and towns from turning their regular charity work over to the federal government as the federal government had no intention of giving any other than emergency aid to those on relief. This problem was also afacer. However, unless they change their minds we have been able to get them to agree that this has to be done in each locality as a local matter and that the local county relief committee is the body to do this.

From this point on the developments in this work will be contained in the report of the committee on public policy and legislation.

R. B. Adams, Secretary-Treasurer.

REPORT OF THE COMMITTEE ON JOURNAL AND PUBLICATION

Due to economic conditions the Journal has been held down to forty pages of reading matter per month with one exception. The total number of pages printed in 1933 was 484. The illustrations chargeable to the Journal Fund have also been reduced from three to any one paper, to two to any paper.

The reduction of the number of reading pages necessitated a somewhat stricter censorship and the declination of some material offered. We also omitted the publication of the List of Members last December, something we had been doing biannually for a number of years.

The expense for cuts, for 1933, chargeable to the Journal Fund was $151.15 as against a bill for the same service for 1932 of $373.73.

A survey of the Journal contents for 1933 shows the following:

Original articles, 103, pages 309.
Personal editorials, in inches, 575.
Editorial Paragraphs, in inches, 354.
Signed editorials, in inches, 476.

According to the report of the business manager the income from advertising was $1,220.98 less in 1933 than in 1932.

In view of the above statements the publication board decided that hereafter authors desiring cuts to illustrate articles must bear the expense thereof.

The names of all libraries in Nebraska, excepting the libraries of the two medical colleges at Omaha, will be taken from the complimentary mailing list.

The members of the publication board and the editor would like to believe that the quality of the contents of the Journal for 1933 has been above the average and that the Journal reader has not suffered a loss in spite of the lesser number of reading pages.

The Committee on Journal and Publication asks for a continuation of an appropriation of $1.50 per member for the ensuing year.

R. B. Adams, Secretary,
B. F. Bailey,
A. F. Tyler,
F. A. Long, Chairman.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor..........Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman..........Madison
A. F. Tyler..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex Officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. XIX March No. 3

MARCH

Beware of March, she's like a fickle maid,
A careless vamp, and mistress of her trade,
Flaunting her charms for whom it may concern.
She bloweth hot or cold in careless turn,
Close on the heels of frozen yesterday.
To-morrow's sun may then pretend of spring,
The songs of birds may through the forest ring,
And rain will come and turn the landscape gray.
Still, we love March with all her changing moods
And promises of longer, brighter days,
When we may walk by streams in waking woods
And hear the music of the thrushes' lay.
Then welcome March, for surely she doth bring
The end of winter and the breath of spring.

—Robert E. Baxter.

CALL FOR PAPERS

If you wish to read a paper at the next annual meeting in May, 1934, please send your title and name to R. B. Adams, Secretary, Center McKinley Bldg., Lincoln, Nebr.

ANNUAL DUES

You are now delinquent. Send $5.00 plus your local Society dues to your County Secretary.

A COMPOSITE ON MEMBERSHIP IN MEDICAL ORGANIZATIONS

At the risk of tiring the reader we are republishing some things heretofore said in this *Journal* about membership in medical societies for we feel it has been better said before than we can present it anew:

In these days of organization of all lines of endeavor it should require no argument to convince any physician that his greatest hopes must lie in his membership in organized medicine and in his interest in the work the organization is endeavoring to promote. Forward looking men in the medical profession believe that State Medicine is threatening the very foundation of medicine as it exists today. Against this we must present a united front. The physician who does not ally himself with medical societies, or, being a member, allows himself a lapse for no good reason, is a losing member of the medical profession. Cast about you. If you know a physician who is not a member, never has been a member, or having been one has lapsed for want of interest, you know a man who is losing out in his professional career.

Attendance at medical society meetings has always seemed to the writer time and money well spent.

The social features, meeting one's friends, meeting new faces, getting their viewpoint, is worth all it costs in time and money. Listening to the reading and discussion of papers is a veritable postgraduate school without clinics,—and now we also have clinics.

A noted surgeon once told the writer that he had never attended a medical society meeting however humble, without learning something.

Pity the psychopathic mortal who is not interested in medical society meetings for he is not a valuable asset to the community that depends on him for medical care.

"Attendance at medical meetings develops a spirit of fraternity between the young and old practitioners. Each needs to be associated with the other and each must make his contribution to the medical meeting to make it a success. The experience of the older practitioner is as valuable to the younger as the knowledge of recent medical procedure is of value to the elder. The closer the practitioners of all ages are drawn together the better will be the quality of success.

"Among the greatest advances in the practice of medicine in recent years has been the growth of the spirit of cooperation among doctors, among their patients, and between the medical profession and the public. The individual doctor can do comparatively little in educating the individual patient. for his instruction begins only when sickness is already present. Nor can the individual patient and family correct their defects of ignorance or inability to cooperate after disease has come upon them. No argument is needed to prove the necessity of collective action of individual doctors and of concerted measures by the people.

"Physicians throughout the civilized world have their medical societies which represent the standards of individual doctors. The fundamental organization is the county medical society to which all physicians are eligible, except that small minority who are so intensely individualistic by temperament that they cannot live in peace with their fellow doctors. There is a very real sense in which the county society practices medicine. Its officers and committees promote the establishment of hospitals and public health nursing, and advise the authorities regarding their conduct in public health matters. They also carry on campaigns for educating the people so that they will be ready to cooperate with the family doctor when sickness comes or is threatened. The county societies set the standard of medical practice and of the relations of doctors to the public.

"Beware of the physician who is 'too busy' to attend medical meetings, especially those of his own county medical society. All kinds of excuses are offered by some physicians as to why they seldom attend medical meetings, but the most frequently heard is that they are too busy. The physician who is so busy, that he does not have time to associate with his colleagues, had better check up on himself and find out what's wrong. Who is it that writes your medical text books? Who is it that contributes the important articles to current medical literature? Who is it that you call in consultation when you have the opportunity to secure the best medical talent?

"If you will make inquiry, you will find that it is the busiest men in practice. Yet these same men are those who are constantly attending medical meetings. You will find them at county, district and national meetings. They are there because they feel they cannot afford not to attend. They are anxious to keep up with the progress of medicine and recognize in medical society meetings the easiest way to accomplish this. One of the reasons they ARE 'big' is because of their persistent attendance at medical meetings. Think of the scores of medical meetings, such well known men as Deaver, Mayo, Jackson, etc., attend. The great Osler was one of the most persistent attenders of medical meetings and seldom missed a meeting of his local county society.

"Doctor, shake yourself and move. Come on out and attend more meetings. If you don't like the programs, tell them how they can be made more attractive. If you don't like those in charge of things, get your crowd organized so you can put in power those who will work harder for the society and who will put on programs that will appeal to all. But in any event, come out to the meetings. Don't hide yourself under a bushel."

GOVERNMENTAL REGULATION OR GOVERNMENTAL MEDICINE—WHICH?

Medicine has been confronted by a rapidly changing economic and social status which in late years has made unusual demands upon the doctor. The clock cannot be turned back. We may mourn for the "good old days" and hypocritically lament the demise of the "old family doctor." He will not return and neither will his horse and buggy. And who should want the return of either? What probably is wanted is a modern, cultured, scientifically educated doctor with the nursing attributes and philosophical concepts of the legendary "old family doctor." It was inevitable that medicine would be caught in the economic and social maelstrom of the twentieth century. It was inevitable that the simple requirements of the doctor in the eighteen hundreds would be supplanted by the complexities of the nineteen hundreds.

The wisdom and virtues of the medical profession are being subjected to a severe test at the present time. There are those who are still following the spectral shadows of medical individualism. There are those with the erroneous concept that the doctrine of the survival of the fittest infers physical power. There are those who would solve the problem by governmental medicine, notwithstanding that the road to this desert mirage is marked with the bleached bones of other institutions which sought a utopia in socialism. There are those who do not differentiate between the government as an umpire and as one of the teams. There are those who have reluctantly concluded that our medical organizations have not measured up to their responsibilities. and that their long and continuous cohabitation with political expediency has resulted in an offspring of astigmatic egotism and selfishness, not fitted for the courageous leadership necessary to put medicine on an equitable economic basic.

It is generally accepted that medicine is a public necessity. There are those who believe that it should be under governmental regulation comprehensive enough to prohibit unfair competition. There are many who believe that the prime purpose of hospitals is a place to treat the sick and that as a public policy they should be open to all physicians licensed to practice medicine and that every physician who is on the staff of a hospital should be given an equal opportunity, in said hospital and that any secret transaction or trade agreement between such a hospital and a physician which violates the spirit of equality of opportunity should be prohibited. There are many who believe that competitors as well as the government should have full knowledge of volume cost, expense and profit and that the spread of costs and fees that shall be permitted should be established by governmental regulation. There are those who believe that the delegation of medical service and medical propaganda to civilians, as individuals or groups, is unsound medicine and detrimental to the best interests of the profession and the social order; that syndicated medical articles is unadulterated commercialism and that if there is any necessity for the publication of medical literature in lay papers or the radio, except on very rare occasions, that it can be embraced in sanitation and hygiene and should be published under the supervision of an accredited governmental agency. These proposed regulations may seem radical but, they are conservative. For the past twenty-five years legal reserve life insurance companies, the primary purpose of which is service, have submitted to the licensing of their representatives. And these licenses have been canceled for fraud, discrimination and twisting in any manner. These companies have been subjected to governmental examinations in all divisions of their organization; have been told what kind of contracts they could sell; in what they could invest their funds; what percent of return they could promise on accumulated money held in trust by them; what risks they could assume and in addition have been required to submit to the public a full report of their affairs and stewardship once each year. These institutions have passed though the last four years of destruction with a casualty rate of ½ of 1% and some of this may be reduced. What other institution has even approached this record? What a glorious feeling it would be if medicine could even get within hailing distance of such a record. I for one am not afraid of the Big Bad Wolf—Governmental Regulation. There are many new elementary problems confronting the younger men in medicine. Young physicians are replacement troops to close the gaps as casualties occur in the ranks of the finest army of service that is given to man, soldiers trained to "soothe and to heal" and whose love for humanity helps to make this a better place in which to live.

—Czar Johnson, Lincoln.

MAKING MOTHERHOOD SAFE FOR MOTHERS

Mother's Day—May 13th—is to be observed by women's clubs, men's clubs, medical societies, chambers of commerce and other professional and civic groups who will join in community efforts throughout the nation to "Make Motherhood Safe for Mothers." This announcement is made by Mrs. Shepard Krech, President of the Maternity Center Association, New York City.

"An important step forward is to be taken this year," states Mrs. Krech. "In three previous Mother's Day Campaigns, the effort was to arouse the public to the importance of the fact that two-thirds of the maternity deaths are preventable; that 10,000 of the 16,000 women who annually die in childbirth could be saved. The next move, which is to be taken this year, is to do something quite specific and definite about it, with groups working in every community."

Mrs. Krech stated that specific changes cannot be made to improve conditions until people study their own local maternity facilities, and determine just what is needed. She indicated that the phases requiring attention may differ widely in various communities.

"Blank appraisal forms," added Mrs. Krech, "are available. By the use of these, any group of persons may conduct an investigation into the adequacy of what their own town or county is doing for mothers. Such questions as these are to be answered: 'Number of maternity beds?' - 'Total number of births in the last year?' - 'Number of deaths in the last year?' - 'Is organized prenatal nursing service provided?' - 'Is your hospital approved by the American College of Surgeons?'

"There has been a great deal of sentiment surrounding Mother's Day during the time that it has been observed in this country," said Mrs. Krech. "In the last few years there has been a successful effort to direct this fine feeling toward the important subject of saving mothers from unnecessary death. But emotion alone is not enough. We must have facts, pertinent facts, local facts, so that groups in every community may work with their own physicians, health officers, nursing associations and hospital authorities to alter those factors in the situation which are a barrier to safe motherhood.

"Only by an appraisal of maternity facilities in every community, and study of their quality, can the great step forward be taken. These blanks are available free. Prizes are to be awarded those groups which have the highest rating for making a thorough-going survey and presenting a plan for improvement based upon that survey. Programs for club meetings are also available without charge, as well as publicity material for local Mother's Day Campaigns designed to direct the sentiments surrounding this occasion into channels that will be productive of results in terms of human lives saved."

The address of the Maternity Center Association is 1 East 57th Street, New York City.

—Maternity Center Association, New York City.

HOW TO CITE REFERENCES: ATTENTION AUTHORS!

Dear Dr. Long:

Will you kindly consider two suggestions on how to improve the usefulness of *The Nebraska State Medical Journal* for your members and other readers all over the United States?

I. Abolish the use of Roman letters to indicate the volume number of your journal. Use Arabic numerals exclusively because the Roman letters are unknown above XXX, for instance XL; XC; CLXXXVIII, and they are the cause of many errors in references.

II. Use Arabic again in all citations to the literature and make the style of your bibliographic references conform to Quarterly Cumulative Index Medicus procedure. This requires—in the order given, name of author, title of article, name of journal with volume in Arabic bold type, inclusive paging and the year last where the eye catches it quickly.

In your February issue I note you have several ways of quoting references. You should give instructions to your authors on this point and make known to them your policy which should be that of the Quarterly Cumulative Index Medicus, because all writers and workers consult that work. Medical librarians would like to standardize this important matter, because we feel that everybody will benefit by this scheme. Therefore we hope to have your support in this good cause.

I shall be glad to hear from you soon, and hope you will change to Arabic with the March issue.

Very truly yours,

ALFRED L. ROBERT,
Medical Librarian, Columbia University
College of Physicians and Surgeons.

GRANULOMA COCCIDIOIDES: FURTHER OBSERVATIONS ON USE OF ANTIMONY AND POTASSIUM TARTRATE AND ROENTGEN RAYS IN TREATMENT

C. C. Tomlinson and Paul Bancroft, Omaha (*Journal A. M. A.*, Jan 6, 1934), present evidence which indicates that antimony and potassium tartrate, applied locally, is of value in the treatment of granuloma coccidioides. They cite their previous case, give its progress to date and report an additional case in which the patient has appeared to be in excellent health during the past two years, but they have continued to give him biweekly injections of the solution of antimoney and potassium tartrate in doses of 5 cc. They believe that their two case reports are evidence that prolonged treatment with intravenous injections of antimony and potassium tartrate and local roentgen therapy is effective in the treatment of granuloma coccidioides. Admitting that their two apparent cures and that of Guy and Jacob do not supply conclusive evidence, they know of no other report in which comparable results have been sustained over a period of several years. They are convinced that the treatment must be continued for a long time.

IMMEDIATE TREATMENT OF COMPOUND FRACTURES: THE ALBEE BONE GRAFT AND THE WINNETT ORR METHOD OF POSTOPERATIVE CARE

Since the adoption of his method for the postoperative treatment of patients presenting compound fractures by infrequent dressings, H. Winnett Orr, Lincoln, Neb. (*Journal A. M. A.*, Oct. 28, 1933), has obtained much better results. More rapid healing with less scarring has been the rule, and subsequent bone graft procedures have been more successful accordingly. Several times during the past few years it has been possible to obtain much earlier satisfactory results. These have been accomplished by plastic bone procedures of various kinds and by manipulations for the correction of deformity performed during the course of healing of the infected wound. While this has been contrary to the author's previous custom, the patient has gone on to good healing, and the author has thus been able to obtain earlier and better results in such cases. He has not undertaken a formal primary Albee bone transplant at the time of an open infected fracture until recently. He felt that since he has been so successful in preventing postoperative infectious complications and healing had been obtained so regularly in the absence of the bone graft, a similar result might be obtained with a bone graft present. It was obvious also that the ultimate result in such a case, if successful, would mean a shortening of the patient's stay in the hospital and a reduction of many months in the disability period. Early healing of the wound and repair of the fracture in this way would also have the effect of avoiding secondary surgical procedures and the danger of other infectious and deformity complications. He reports a case which demonstrates that such a program of treatment is feasible. A bone transplant may be put into an infected area and, by suitable fixation, immobilization and protection of the wound against mixed infection, the patient may be carried through to healing of the wound and repair of the bone defect at the same time. This appears to demonstrate that the infectious complications to which one has been accustomed in most of these cases and which delay not only the healing of the soft part wound but also the repair of the fracture are due to mixed secondary infection incurred by the patient in the course of secondary so-called antiseptic dressings.

A SURVEY ON CRETINISM IN THE UNITED STATES

Dear Dr. Long:

I am making a survey on the incidence of cretinism in the United States, and would greatly appreciate it if you will ask any of your readers who might have records of such cases to communicate with me. I am enclosing a form which contains the information desired.

No one has ever attempted to make a survey of this kind and it will only be through the cooperation of the medical journals and the profession that it will be possible to make such a survey. I will be especially interested to receive any photographs of these cases. I am asking that the names and addresses be given in order to eliminate the duplication of cases. When this data is compiled, I expect to turn it over to the American Medical Association, where it may be filed for further reference and study.

Name.................................... Address....................................

Nativity.................................... Age.............. Sex..............

Brief Physical Characteristics....................................

....

....

Brief Clinical History....................................

....

....

Goiter { Present / Absent.............. Mental Status....................................

Results of Medication....................................

Signed....................................

—Arnold Jackson, M. D., Madison, Wis.

CORN MEAL AS YOU LIKE IT

Corn, to the Englishman, is not our corn but wheat. To the Scot it means oats. And to at least one Australian, traveling in America, our spoon corn bread proved to be "a farinaceous food" she had never heard of before. In fact, in other countries than America, "corn" is the name applied to the principal grain crop, whatever that may be. Indian corn, our corn, is native to the Americas.

In the United States today, we have more corn than we can use, although, as the Bureau of Home Economics of the U. S. Department of Agriculture points out, we still consume tons and tons of corn meal, as we always have. Some of it is "old process," or "waterground" meal, still so-called because originally ground in mills run by water power. But "waterground" meal is ground between millstones and in many places today there are mills which turn out stone-ground meal by steam or electric power. Especially in the country and in the south, it is still possible to get the "waterground" meal, which is in fact softer and richer in food value than the "new process" or bolted meal.

The "new process" grinds the meal between steel rollers or steel disks, and the product is more granular than the stone-ground meal. Its food value is less than the stone-ground meal because the "new process" takes out nearly all of the skin and the germ of the grain, which is left in the meal in the old process. Those are the parts of the grain which have most minera and vitamin value, but the germ spoils rathe quickly. The advantage of the "new process" meal is that it will keep longer than the old-fashioned product because the germ is "bolted" out.

When life was simpler, people used fewer and simpler foods. The corn- or maize-eating people added to the grain something to supply other kinds of nutriment in the same dish. Thus the mush-and-milk or "hasty pudding" of early New Englanders constituted actually the best kind of combination of food values we know how to obtain in any two foods. So also the hoecake and buttermilk of the south. Natives of Jamaica mix corn meal, salt fish, and lard to make their "stamp-and-go." Mexicans add meat and peppers and onion to make tamales. Italians added cheese or tomato or gravy, or perhaps all three, to their "polenta" made of mush and milk. Our grandmothers taught the meat packers and the butcher shops of today how to add ground meat to corn meal mush to make what we enjoy as scrapple. In all those combinations. protein, minerals, fats, and some vitamins are added to a food which itself is chiefly starch. The Italians, adding tomatoes and cheese and meat, made actually a full rounded meal in their "polenta."

As would be expected in a land as big and as varied as the United States, corn, which grows everywhere, finds favorite uses more or less peculiar to different sections of the country. If you come from the south, you want your corn pone or your hoe cake, made with sour milk or buttermilk. If you are a northerner, you like your mush-and-milk, or your Indian pudding, and you make this latter with yellow meal, milk, and molasses. But there are dozens of other ways to use corn meal.

The Bureau of Home Economics furnishes some three dozen corn meal recipes—and they range all the way from plain mush to Indian meal doughnuts, corn meal fig pudding, and gingerbread. Some of the cheapest are crackling bread, raised corn meal muffins, corn meal mush with meat, polenta, and Indian pudding.

The Mexican tamale is also cheap—made of scalded meal or mush, with chopped meat (usually chicken) and red peppers, with onion or garlic. This mixture is folded and tied into corn husks which have been softened in hot water. and the tamale is then boiled. A variation of this is tamale pie.

—Bureau of Home Economics.

A green apple a day buys the doctor's coupe.—Herald Tribune (N. Y. City).

EDITORIAL PARAGRAPHS

From the *International Medical Digest* we glean that nicotine has been recovered from the breast milk of a nursing mother.

It is stated that there are 900 organizations writing hospital insurance on a three-weeks basis. This alone should put people on guard.

The annual meeting of the Nebraska State Medical Association will be held at the Cornhusker hotel, Lincoln, May 22, 23, 24, 1934.

The *Annals of Surgery* has just rounded out fifty years of existence and all these years under the editorship of Dr. Louis Pilcher, one of the great surgeons of the United States.

New advertisers are Omar Wheat Cereal (Omaha), B. H. Harms, D. D. S. (Omaha), Borden's Products, and Johnson and Johnson, Surgical Supplies. We owe a lot to our advertisers. The profession as individuals should patronize our advertisers.

That advertising in *The Nebraska State Medical Journal* is worth-while is indicated in the following appreciation from one of our recent advertisers: "We sent out a mailing to reach the doctors on the same day that the *Journal* appeared, and the results of this double attack have been most encouraging. This would seem to indicate the effectiveness of your medium for our purposes, and we are very glad to continue our monthly pages."

The Mid-Western Section of the American Congress of Physical Therapy will hold its spring session on Tuesday, March 13, 1934, at Indianapolis, Indiana. The morning will be devoted to clinics at the University and Indianapolis City Hospitals. The afternoon scientific session, commencing at one o'clock, will be held at the Indiana University School of Medicine. The evening session at eight o'clock will be held jointly with the Indianapolis Medical Society, at the Athenaeum. Dr. A. F. Tyler, Omaha, is president of this organization.

Dr. Robert Osgood in the Gay Lecture on Medical Ethics (*New England Jour. Med.*), said "A 'breath' may have the force of a gale and capsize the boat. No matter what the patient's habits may be, the pot in this instance has a perfect right to call the kettle black. It is unfortunate that so many able physicians' careers have been injured, and not a few have been ruined, by the oft unmerited remark of a patient or of a colleague that Dr. Blank drinks too much." Reminds the editor of pioneer days when people used to say, "Dr. B. is a splendid physician, if only be did not drink so much."

The Merck Institute of Therapeutic Research, Rahway, New Jersey, announces the appointment of Dr. Eugene Maier as Chief Bacteriologist. Dr. Maier is a graduate of the University of Tuebingen, Wuertemberg, Germany, and completed his studies at the University of Erlangen, Germany. Dr. Maier was associated with the Rockefeller Institute of New York as Research Assistant from 1926 to 1930. Since 1931, up to the time of becoming associated with Merck & Co., Inc., Dr. Maier has been at Bellevue Hospital, New York, in the department of pathology, as bacteriologist for the Tuberculosis Division of Columbia University.

The Sioux Valley Medical Association meeting at the Warrior Hotel, Sioux City, January 23 and 24, was well attended and offered a program of unusual excellence. Dr. Robert Schrock of Omaha gave a paper on "Fractures of the Tibia and Fibula" and also gave an orthopedic clinic. Coincident with this meeting at the same place occurred the meeting of the Sioux Valley Eye and Ear Academy. Dr. C. M. Swab, Omaha, read a paper before the meeting on "A Preliminary Report on the Ocular Effects Due to Thallium Acetate Poisoning." Dr. W. H. Stokes, Omaha, "Fundus Changes in Arteriosclerosis, Hypertensive Disease and Nephritis," with lantern slides and fundus photographs. Dr. Leo P. Coakley, Omaha, "Oral Leukoplakia." Dr. J. J. Hompes, Lincoln, was elected president of the Academy for the ensuing year.

Physicians and medical societies throughout the United States, no matter which side they take on such a highly controversial subject, are watching with interest proposed legislation before the Seventy-third Congress calling for amendment of the present federal birth control laws. These amendments, commonly known as the "Doctors Only" bills, are Senate Bill 1842, sponsored by Senator D. O. Hastings of Delaware, and House Bill No. 5978, introduced by Representative Walter Pierce of Oregon. This proposed legislation would amend the existing federal restrictions so as to legalize the sending or receiving of contraceptive information, instruments and medicines between physicians and their patients, medical colleges and hospitals and from physician supply houses and manufacturers. The sponsors of the "Doctors Only" bills merely seek to place the responsibility for prescribing contra-ceptive action where it rightfully belongs—in the hands of the medical fraternity.

OBITUARY

Robert H. Wolcott, Lincoln, Nebr.; University of Michigan Medical School, 1893; not in practice; chairman of the zoology department of the University of Nebraska; in the department of zoology since 1895; dean of the Lincoln Branch of the University of Nebraska College of Medicine during the years when the first two years of the medical course was given at the University at Lincoln, 1909 to 1915; a fellow of the American Association for the Advancement of Science, and an honorary member of the Michigan Academy of Science. He was active in the formation of the American Ecological society and belonged also to the Wilson Ornithological club, American Ornithologists' union, American Microscopical Society of Zoologists, American Society of Naturalists, Entomological Society of America, Nebraska Academy of Sciences, Nebraska Ornithologists union and American Association of University Professors; died January 23, 1934, aged about sixty-five years. A widow, daughter and son, survive.

Albert E. Hoff, North Bend, Nebr.; native of Galesburg, Ill.; Central Medical College, St. Joseph, Mo., 1898; in practice for a short time at Malmo; later moving to North Bend where he had been in practice for thirty-two years; fellow of the American College of Physicians; interested in welfare organizations of his community; member, Nebraska State Medical Association; sometime, president of the Dodge County Medical Society; died of heart lesion January 27, 1934, aged about sixty-three years. A wife and daughter survive.

Oscar L. Wilson, Rushville, Nebr.; (retired); native of Indiana; Medical College of Indiana, 1879; practitioner in Sheridan county from 1895 until retirement a few years ago; formerly well known member, Nebraska State Medical Association; a man of sterling worth and an accomplished physician; died January 21, 1934, aged seventy-seven years. A widow and two sons survive.

Charles F. Clark, Omaha; native of Eaton, N. Y.; University of Michigan Medical School, 1881; practitioner at Dunlap, Iowa, in his early career; in practice in Omaha for forty-two years; member, Nebraska State Medical Association; active in church work; died of a heart attack in his office, February 10, 1934, aged seventy-seven years.

Alexander L. Mathews, Calloway, Nebr.; (retired); Eclectic Medical College, Cincinnati, 1882; practitioner at Calloway since 1886 when he was the only physician within fifty miles in one direction; a man who experienced real pioneer practice in the raw state; a man of affairs in his community; organizer of the first bank in Calloway; died February 12, 1934, aged eighty-five years.

COUNTY SOCIETY REACTIONS TO FEDERAL EMERGENCY RELIEF FUNDS

Dear Doctor Bailey:

At a special meeting of the Lincoln County Medical Society held in North Platte, Nebraska, on Feb. 1st, 1933, the following resolutions were passed.

"RESOLVED, that the Lincoln County Medical Society go on record as being unfavorable to the fee schedule as quoted in the circular letter of January 15th, 1934, from Dr. R. B. Adams, Secretary of the Nebraska State Medical Association, to-wit:

"My decision would be similar to that which has been obtained in other states; namely, that we will pay fifty percent of the bona fide going rate, that is, if $2.00 is charged in a city for an office call, we will pay 50c. If $3.00 is the charge in the city for a home visit, we will pay $1.00, plus the same amount of mileage which we allow all of the people who travel for the Federal Emergency Relief and Civil Works Administration here in Nebraska. Namely, five (5c) cents per mile, both ways, outside corporate limits of the town in which the doctor resides."

RESOLVED further that the Lincoln County Medical Society would be desirous of adopting a fee schedule more commensurate with the services rendered and the cost of rendition of such services, and be it further

RESOLVED that the Officers of the Lincoln County Medical Society be directed to convey these resolutions together with an appropriate letter, to the Committee on Public Policy and Legislation for the Nebraska State Medical Association."

It is the desire of the Lincoln County Medical Society to cooperate fully with the Federal Government to the end that no person shall lack for competent and adequate medical care in these times of dire distress, but we find on careful and diligent consideration of the fee schedule as offered by the Federal Administrator that it would be absolutely impossible to carry on a practice of which a goodly portion is necessarily relief. The reasons being submitted as follows:

1. The tributary territory surrounding North Platte is large and sparsely settled which necessitates long drives to see patients thus making it impossible to maintain an overhead expense and undertake such drives at 5c per mile.

2. Our previously prevailing fee schedules have, as a result of the depression, been decreased already to meet the popular demand for reasonably lowered fees commensurate with all commodities and services—therefore to operate under a schedule of 50% what our prevailing fees are now, would simply be confiscatory, and subversive both to the interests of the Physician and his patient.

3. It is our belief that there exists an honest desire on the part of the Federal Government to promote the welfare of its citizens who are engaged in all classes of service, industry, and labor, instead of arbitrarily enforcing the consummation of edicts and agreements which are sure to lear to financial disaster to those engaged in such pursuits. So therefore assuming the above to be true we are sure that an equitable arrangement can be reached whereby the only commodity the Physician can offer, viz., "Service," shall be unstinted and free from penury through the allowance of reasonable fees by the Federal Government for such services rendered in its behalf.

4. Our experience has proved beyond any reasonable doubt the truth of the statement that "The lowering of a fee today to meet an emergency is sure to make that fee the prevailing one of tomorrow."

As a result of the above facts we herewith respectfully submit that the schedule of fees as outlined by the Nebraska Workingmen's Compensation is complete in every detail and offers the least possible amount for services that would enable the Physician in this territory to accept as a justifiable and reasonable fee.

We beg to recommend therefore that you and your committee work to the end that such a schedule be adopted.

* * * * * *

The following motion was passed during a special meeting of the Dawson County Medical Society, January 22, 1934.

The Dawson County Medical Society goes on record as opposed to the Federal Relief Medical Care as approved by the Nebraska State Medical Association, for the following reasons:

1. Unfairness of the fees to the rural practitioners, unfairness as to the reduction of fees while other classes of work, food and clothing are asked to make no reduction.

2. Establishing a precedent as to future fees, also county and private fees.

3. Vagueness as to eligibility of those coming under this class.

That the State Medical Society and all other County Societies be notified of our action.

TUBERCULOSIS ABSTRACTS

"Tuberculosis can be like an iceberg," says David A. Stewart, "only one-tenth visible and nine-tenths submerged." A recent study of 2,000 apparently healthy food-handlers in New York City calls attention to the presence of unsuspected cases and to the danger of this silent menace to others. Abstracts of the report of this study follow.

TUBERCULOSIS AMONG FOOD-HANDLERS

In 1915 the Department of Health in New York City introduced a plan requiring food-handlers to obtain a certificate showing that they were free from infectious diseases in a communicable form. Physical examinations were limited at first to food-handlers in hotels, restaurants and other food-handling establishments, and later extended to include those who handled foods in hospitals, foundling asylums and similar institutions.

SURVEY OF 2,000 FOOD-HANDLERS

Feeling that the method followed in examining food-handlers was open to question a survey was begun in 1932 of 1,000 apparently healthy food-handlers. Subsequently another group of 1,000 was similarly studied. These surveys had two objectives in view, namely:

1. To determine the incidence, extent and character of pulmonary-tuberculosis lesions in an average group of apparently healthy food-handlers.

2. To determine, if possible, what would be an effective way, in a community like New York City, to screen out those cases of tuberculosis in food-handlers which might prove important sources of infection with tubercle bacilli.

The method adopted after some experimentation was to make:

1. A routine roentgenogram of the chest.
2. An examination of the sputum.
3. A physical examination of the chest of those in whom a pulmonary lesion was demonstrated by the X-ray.

Of the first group of 1,000 examined, 772 were men and 228 women. The total number diagnosed as tuberculous was 125 (12.5 per cent), and of these 109 had no diagnostic physical signs.

In the second group of 1,000 there were 473 men and 527 women, and a total of 112 cases of tuberculosis were discovered. The cases discovered in the two groups were classified as follows:

	1st group	2nd group
Healed childhood tuberculosis	73 cases	83 cases
Latent adult tuberculosis	16 cases	19 cases
Active pulmonary tuberculosis	36 cases	10 cases

While the proportion of women in the second group was larger than that of the first group the average incidence of lesions discovered did not vary much in the two groups. An important difference, however, appears in the active tuberculosis group, namely, 3.6 per cent for the first group and 1.0 per cent for the second. This conforms with the observation that pulmonary lesions are more common in adult males than in adult females.

CONCLUSIONS

The authors conclude, that the average incidence of active pulmonary tuberculosis lesions of food-handlers in New York City is approximately 2 per cent and they believe that this represents the average situation in all large urban communities. In New York

City, with a food-handling population of more than 325,000, this percentage represents the existence of not less than 6,500 cases of unknown and therefore uncontrolled active pulmonary tuberculosis, to say nothing of thousands of cases of arrested tuberculosis, childhood type tuberculosis and pleurisy. Other conclusions are that when the question of tuberculosis is involved no physical examination of the chest is worth its name without the X-ray, and that progressive pulmonary tuberculosis may exist without demonstrable diagnostic signs.

A Tuberculosis Survery Among 2,000 Food-Handlers in New York City, Martin, Pessar and Goldberg, Am. Rev. of Tuberc., Feb., 1934.

THE NEBRASKA RADIOGRAPHERS SOCIETY

In December the usual monthly meeting was replaced by a dinner held at the Lincoln Hotel, Lincoln, Nebraska, on December 2nd.

The first meeting in 1934 was held on Monday, January 8th, in the Medical Arts Auditorium, Omaha. This was attended by about thirty-five Omaha and Lincoln members. Dr. C. C. Hardy presented a group of sinus films, discussing them from the technical standpoint. A movie on encephalographic procedure was shown by Dr. Howard B. Hunt, followed by a general discussion of the technical problems met in x-ray laboratories. At the business meeting letters from the officers of the national society were read, one pertaining to a film exhibit to be held at the annual convention in Milwaukee, May 22 to 25, and another from the national president urging the radiographers to recognize the advantages of membership in the national society.

On Monday, February 5th, a film display by a group of the Omaha technicians was given at the Omaha Medical Arts Auditorium together with a round table discussion.

All members of the society are urged to make a special effort to attend the meeting in Lincoln on March 5th as this will be the last meeting before the annual state convention.

Officers of the Nebraska Society of Radiographers are: Miss Pauline McGough, R. T., president; Miss Anna Barry, R. T., first vice president; Miss Irma Brauer, R. T., second vice president, and Mrs. Helena MacCloud, R. T., secretary-treasurer.

AUXILIARY NEWS NOTES

From the Auxiliary of the Tri-County Medical Association and their husbands: They were entertained February 24 at a 7 o'clock dinner at St. Francis hospital, Grand Island. Covers were laid for twenty-four. Following the dinner the Auxiliary held its usual business meeting and completed two layettes, also making plans for making three bed comforters at the next meeting.

* * * * * *

On January 16 the Lancaster County Auxiliary was invited to meet with their husbands in the county society rooms. Slow motion pictures of various 1933 football games were shown by Dr. B. F. Hooper, and Ed. Weir, of football fame, explained them. About 75 enjoyed the program and refreshments which followed.

* * * * * *

The Tuesday evening on which the county societies meet seeming to be a logical and convenient date, the Lancaster County Auxiliary met in the lounge of the University Club on February 6. The committee for the state convention was announced and plans discussed.

Mrs. E. S. Wegner reported on a survey just completed in the Lincoln High School by the Nebraska Tuberculosis Association. Doctors donated their services thus allowing money for most helpful x-ray pictures.

The Auxiliary has sent for several of the children's health plays sent out by the A. M. A. and are suggesting that the various P. T. A. societies to which they belong use them in addition to public health speakers during the Public Health Week in May.

After the business meeting bridge was enjoyed by the one-car women until the adjournment of the medical meeting.

* * * * * *

Mrs. H. R. Miner of Falls City, chairman of exhibits for the national convention which will be held in Cleveland in June, is requesting that any auxiliary in the state which has done an outstanding piece of work report the same to the State President, Mrs. B. F. Williams, of Lincoln, before May 1.

During the month of February, Mrs. B. F. Williams was a guest of the Fremont Auxiliary. She also attended a committee meeting in Omaha and was the guest of Mrs. Adolph Sachs at the Woman's Medical club. The Omaha Auxiliary has a paid membership of 118.

* * * * * *

State convention May 22, 23 and 24. Come and bring your husbands.

* * * * * *

Members at large are urgently requested to send their national and state dues to Mrs. Earl Farnsworth, 1506 West First Street, Grand Island, Nebr., before March 20 if possible.

* * * * * *

The State President urgently requests all county auxiliary to have their dues sent to Mrs. Farnsworth before April 1 as the yearly books close on that date.

—Mrs. John C. Thompson, Chairman, Publicity.

* * * * * *

Mrs. B. F. Williams of Lincoln, president of the Nebraska State Medical Women's auxiliary, spent February 5 in Omaha, and attended the meeting of the Doctors Wives club at the Omaha Woman's club as a guest of Mrs. Adolph Sachs. Mrs. Williams held an informal meeting previous to the luncheon. Mrs. H. R. Miner of Falls City, president-elect of the state auxiliary, arrived during the afternoon to take part in the general discussion of plans for 1934. Mrs. Miner is also a member of the national auxiliary to the American Medical association.

* * * * * *

While the Northeast Nebraska five county group of physicians were in session at Emerson, on the afternoon of February 20, the ladies were entertained at the home of Dr. and Mrs. Kildebeck, and as soon as their doctor-men completed their scientific program the ladies produced their baskets and dishes and served supper.

HEALTH BEHAVIOR

Health behavior is the main goal in health education—What the child does rather than what he knows—What to do rather than what not to do.

Douglas County Auxiliary, under leadership of the President, Mrs. George Neuhaus, who has enlisted the aid of the Dental Auxiliary, is compiling from Hygeia, 1928-1933, a series of health education plays, talks, lessons, film stories, and outlines for use during National Health Week by teachers, school nurses, P. T. A. groups, adult education classes, recreation centers, etc. These are to be built in permanent files suitable for different grades, and will be available in mimeograph form upon request of a group needing such information. Hygeia has been placed in our public, parochial and high schools, and copies of Healthy Land given to the supervisor of school nurses and he school recreation director. Our medical advisory council sanctions this procedure.

One or two persons from your group can go through the files of Hygeia and assemble health stories for your different organizations. Posture and other health pictures can be photographed and made into posters. This will bring Hygeia to the attention of all groups, and will identify the auxiliary and the doctor with health education in your town by giving the correct information regarding diet, posture, periodic examination, dentition, and immunization from a medical standpoint. Such work can be carried on from year to year with very few changes.

Please appoint a legislation chairman and instruct her to get in touch with legislation chairmen in other organizations to be mutually helpful, when necessary. Send me names of all such chairmen in your county. All organizations should be aware of the Tugwell Pure Food and Drugs bill and ask that the legislators see that the community is protected in labels and advertising.

Mrs. C. W. Pollard, Chairman,
Health Education and Legislation,
Woman's Auxiliary, Nebraska State Medical Assn.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society,** held January 23, was called to order by President Hamilton.

The first paper on the scientific program was read by Dr. A. C. Stokes. His subject was "Newer Conceptions of Blood Pressure Readings With Relationship to Body Surface and Weight." This paper was discussed by Drs. Bliss, Pohlman, Ross, Jefferson, and Tamisiea.

The second speaker was Dr. Herman F. Johnson, who talked on "Artificial Impaction of Fracture in the Neck of the Femur." Discussion by Drs. Lord and Fouts.

The last presentation was by Dr. A. P. Condon on "Pathology and Treatment of Gallbladder Lesions." Dr. Henry discussed the paper.

The **Southwest Nebraska Medical Society** held a meeting at the Keystone hotel, McCook, January 18, a banquet preceding the program. Dr. H. H. Grosbach, Wauneta, gave a paper on "Pneumonia."

The **York County Medical Society** at a recent meeting in York, elected Dr. H. O. Bell, president; Dr. R. E. Harry, secretary-treasurer; Dr. H. O. Bell, delegate. A round table discussion on medical economics followed the election.

The **Lincoln County Medical Society** met at the Pawnee hotel, North Platte, February 8. Following a noonday luncheon, several medical and surgical films were shown.

The **Dodge, Washington and Burt County Medical Society** met at the Pathfinder hotel, Fremont, January 29. Some thirty were present for the dinner which preceded the showing of educational films.

The **Platte County Medical Society** met at the Thurston hotel, Columbus, February 1, over a dinner. Drs. J. W. Duncan and William Taylor, Omaha, talked on surgical and obstetrical problems, respectively.

The **Sixth Councilor District Medical Society** met at Osceola, January 16, and enjoyed a dinner at the local hotel. Interesting papers were presented by Dr. Rodney Bliss, Omaha, "Peptic Ulcer"; Dr. A. E. Bennett, Omaha, "Traumatic Encephalitis"; Dr. C. A. Owen, Omaha, "Transurethral Resection." The latter paper was discussed by Dr. A. D. Munger, Lincoln.

—Lloyd Ragan, Sec'y.

The regular meeting of the **Richardson County Medical Society** and the Women's Auxiliary was held January 17, at the Hotel Weaver. A banquet was served, followed by a business meeting and a program.

Speakers of the evening were Dr. Herman F. Major, Dr. Clarence S. Capell and Dr. Albert S. Welch, all of Kansas City. Dr. Major discussed "Types of Mental Disorders"; Dr. Capell spoke on "Prostate Diseases"; while Dr. Welch's subject was "Cardio-Renal Diseases."

The regular monthly meeting of the physicians of **Webster County** was held in this city on Sunday afternoon, January 28, at the Hotel Royal, Red Cloud. A delicious turkey dinner was served at the noon hour, there being covers laid for sixteen, as the wives of the doctors were also guests at this affair. The tables were beautifully decorated in varying and harmonizing shades of red.

Dr. Wegman, of Bladen, gave a most interesting lecture on diabetes, which topic was afterward generally and animatedly discussed by the group.

The following officers were elected: President—Dr. E. A. Creighton, Vice-President—Dr. Wegman, Secretary-Treasurer—Dr. Reed.

At the meeting of the **Otoe County Medical Society** at Nebraska City February 12, Drs. Ralph Luikart and F. P. Murphy, Omaha, put on the program. Occiput Posterior Position and Version and Breech Extractions were talked about and demonstrations made on a manikin and with lantern slides.

The regular meeting of the **Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society** was held in Emerson, Febr. 20, at 2:00 p. m. in the Masonic Hall. The following program had been arranged:

A Symposium on Obstetrics: 1. Conduct of Normal Labor—Dr. Killian, Wakefield; 2. Alleviation of Pain in Obstetrics—Dr. Buis, Pender; 3. Occiput—Posterior Positions—Dr. Paul Simon, Wayne; 4. Breech Delivery—Dr. S. H. Cook, Randolph; 5. Indications for Cesarean Section—Dr. Peters, Randolph; 6. Treatment of Puerperal Infection—Dr. Gramlich, Walthill.

The ladies brought a basket supper and dishes and served at 6 p. m. The program contained the request and admonition: The ladies are urged to come, and the Doctors are urged not to forget that the ladies also like to get together.

The **Adams County Medical Society** meeting for February was held at Ingleside State Hospital on the 7th. A 35 cent dinner was served to about thirty doctors and their wives. A paper by Dr. M. M. Campbell, a new addition to the hospital staff on "Extra Mural Psychiatry" was presented. This paper was well received and brought out much comment. It will be published in this Journal shortly.

HUMAN INTEREST TALES

Dr. R. J. Kaspar, formerly of Omaha, has located at Wahoo.

Dr. D. W. Vanderhoof, Scribner, was reported ill last month.

Dr. J. N. Plumb, York, visited in southern California recently.

Dr. C. W. Pollard has become presiding officer of the Omaha club.

Dr. C. R. Mullong, Norfolk, has become president of the local Elks.

Dr. Robert A. Underwood, has been appointed city physician of Lincoln.

Dr. O. E. Longacre, Rising City, recently was under the care of a surgeon.

The Hebard home, in Arlington, has been transformed into a hospital.

Dr. Lowell Dunn has opened an office at 737 Medical Arts Bldg., Omaha.

Dr. F. W. McCaw, Colon, has been seriously ill with a heart affection, recently.

Dr. A. E. Stuart, Cedar Bluff, has become county physician of Saunders county.

Dr. R. J. Drake, for a short time at Crete, has established a practice at Wymore.

Dr. A. J. Griot, and family, Chadron, spent the holidays in St. Louis, visiting relatives.

Dr. A. S. Main, Loup City, motored to Oakland City, Indiana, last month to visit relatives.

Dr. P. H. McGowan, for twelve years in practice at Schuyler, has located at Columbus.

This Journal regrets the passing of Mrs. F. E. Way, wife of a Wahoo physician of that name.

Dr. C. A. Johnson, Valentine, has gone to New York for about three months of postgraduate work.

Dr. and Mrs. J. P. Lord, Omaha, have returned from a holiday trip to Vermont and Chicago.

Dr. J. J. Podlesak, Lincoln, has been appointed medical examiner for aeronautics for the government.

Dr. Fred Fouts, Central City, was seriously ill during the past month from an infection of an arm.

Tuberculosis skin tests have been given to large numbers of students in the Omaha schools, recently.

Dr. Claude Mason, Omaha, discussed "Amoebic Dysentery" before the Professional Men's Club, February 12.

Dr. and Mrs. Roland Wherry, former Pawnee City people are locating at Pekin, Ill., in the practice of medicine.

It is reported in the lay press that Dr. C. A. Roeder, will resume the practice of surgery in Omaha about March first.

The sympathy of the profession is extended to Dr. C. D. Barnes, Tecumseh, in the passing of Mrs. Barnes recently.

Dr. O. E. Liston, Elmwood, attended a meeting of the Missouri Pacific surgeons at Memphis, Tenn., and also visited at New Orleans, recently.

Drs. Callfas, Potts and Stokes, announce the association with them of Dr. Harold Gifford, son of the late Dr. H. Gifford, in the department of Ophthalmology.

Drs. Warren and Chester Thompson will continue the practice formerly conducted under the name of Drs. Dunn and Thompson at 1530 Medical Arts Building, Omaha.

Dr. A. C. Stokes and Deans Poynter and Riley of Omaha and Dr. J. S. Welch, Lincoln, attended the Conference on Medical Legislation and Hospitals in Chicago last month.

Dr. William Shearer, Omaha, went to Dallas, Texas, early in February to give a clinical lecture and operate before the Dallas Dental Clinic. Mrs. Shearer accompanied him.

Attending the Third Conference of the American College of Radiology, February 11, from Nebraska were Drs. Kelly, Overgaard and Quigley of Omaha and Dr. Rowe of Lincoln.

At the midwinter graduation exercises of Creighton University Dr. B. M. Riley, dean of the Creighton Medical College, gave the graduating address taking as his topic, "Ideals of the Profession."

Through the influence of Dr. E. R. Wernitznig recently located at Bushnell, a health insurance plan has been started. Each family pays $2.50 a month for all medical service, exclusive of surgery and obstetrics.

ROSTER OF OFFICERS—1934

Adolph Sachs, Omaha, President	1933
Joseph Bixby, Geneva, President-elect	1934
George L. Pinney, Hastings	1935
William Shepherd, Rulo	1935
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1936
W. R. Boyer, Pawnee City, Chairman	1936
R. J. Lehnoff, Lincoln	1936
E. L. Brush, Norfolk	1936
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
E. G. Zimmerer, Chairman Medical Section	Lincoln
Morris Nielsen	Blair
W. J. Arrasmith, Chairman Surgical Section	Grand Island
J. W. Duncan	Omaha

ENTERTAINMENT COMMITTEE

Dr. Harry Taylor, Chairman	Lincoln
Dr. Chas. Arnold	Lincoln
Dr. Roy Whitham	Lincoln
Dr. A. D. Munger, Chairman Exhibitors	Lincoln
Dr. Harold Morgan	Lincoln
Dr. George Misko	Lincoln

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
A. E. Buchanon	Fremont
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

ANNUAL MEETING, LINCOLN, MAY 22, 23, 24

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XIX Norfolk, Nebraska, April, 1934 No. 4

CONTENTS

	Page
Pathology and Treatment of Gallbladder Lesions, A. P. Condon, M. D.	121
Congenital Syphilis Is Preventable, Walter Clarke, M. B.,; Ch. B.; L. R. C. P., Edin.	125
Laryngeal Papillomatosis, Philip L. Romonek, M. D., F. A. C. S.	130
Rats: A Satisfactory Technique for Early Pregnancy Tests, Ruth Warner, M. D., and Grace Loveland, M. D.	134
Radium and Rectal Carcinoma, Daniel T. Quigley, M. D.	138
Uterine Cancer and Pregnancy—Report of Two Cases, Earl C. Sage, M. D.	140
Extra-Mural Psychiatry, Myron M. Campbell, M. D.	143
The Management of Prostatic Obstruction, C. A. Owens, M. D.	146
Clinical Pathological Case Reports—II, F. L. Rogers, M. D., and J. Marshall Neely, M. D.	149
Removal of Circular Plaster Casts—A Simpler Way, R. L. Hook, M. D.	151
EDITORIAL—	
The Mantoux Test in Omaha and Lincoln	152
The Cancer Problem in Nebraska	152
Extra-Mural Psychiatry	153
Notes on the Meeting of the Council on Medical Education and Hospitals	153
Health in the National Recovery	154
The Importance of Cheese	156
Editorial Paragraphs	157
Obituary	157
Tuberculosis Abstracts	158
The Societies	158
Human Interest Tales	159

PATHOLOGY AND TREATMENT OF GALLBLADDER LESIONS*

A. P. CONDON, M. D.,
Surgeon to Nicholas Senn Hospital,
Omaha, Nebraska.

Cholecystitis, with the exception of appendicitis, is the most frequent and most important pathology in the abdominal cavity. While common, I am sure it is not as frequent as some statistics (even the autopsy ones) would lead us to believe. Mentzer at the Mayo Clinic in six hundred twelve autopsies (which included children) found gross pathologic changes in sixty per cent. If he had added those with microscopic changes, he would have found many more. I quote these statistics so that you will not disagree with me when I state that not all pathologic gallbladders should be treated surgically. The medical man should be and is as capable to diagnose this disease, to treat the patient, and to recognize the indications for operation as is the surgeon. The best service I can render you in this twenty-minute paper, is to give you the conclusions that I have reached after thirty years of experience as a general surgeon. Many patients can be cured or at least rendered so comfortable that operation is unnecessary. In the sub-acute or chronic forms, urotropin in large doses is of great value in rendering the biliary tract comparatively sterile. It has been known for a long time that if this drug is administered it is excreted in the bile. Large doses of it alone cannot be given on account of the formaldehyde set free. It is irritating to the kidneys. One may give as much as one hundred grains of urotropin three times a day by combining each dose with sixty grains of sodium bicarbonate and sixty grains of sodium citrate. Lord Moynihan has said "I know of no treatment brought forward within the last few years which has so greatly reduced the necessity for surgical interference in any individual disease, as does the massive doses of hexamine in gallbladder lesions."

---

*Read before the Omaha-Douglas County Medical Society, January 23, 1934.

The symptoms are often produced by the distension of the gallbladder. Giving the patient an ounce of concentrated magnesium sulphate upon an empty, alkalized stomach, often empties the gallbladder. Twice in the past year we have seen a large palpable gallbladder disappear clinically within an hour after this treatment.

Another remedy of inestimable value is mucin. Mucin does not alkalize the stomach contents. At least in ulcer patients the good results obtained are due to a coating over of the mucosa. When mucin is added to a hydrochloric acid solution in vitro, it does not lessen its acidity. If a frog's leg is immersed in a solution of hydrochloric acid and pepsin, it will be digested to the bone, but if the leg is covered with mucin, it will remain unchanged.

Patients above normal weight should diet to reduce, and avoid the foods that bring on distress. They usually can find out better than the doctor can, what to avoid. If they cannot be made comfortable under this line of treatment, or if they have attacks of colic coming on frequently, we advise operation.

During an acute attack, we think the best treatment consists in a hypodermatic injection of morphine and atropine, a hot bath, urotropin, and magnesium sulphate as described above. Diathermy through the gallbladder region is an excellent way to apply heat. If they do not recover promptly or within a few days, one must think of operation. I do not think that the patient should be operated upon during the acute attack, unless all the signs and symptoms point to a progressive inflammation with the danger of gangrene or of rupture. However, some surgeons are advocating operation during the acute stage. Some well known surgeons in this country and in Europe are advising this procedure. Finney of Baltimore, in a recent discussion stated that these patients should all be operated upon at once, and that the gallbladder always should be removed. He did not even except the acute cases with jaundice and fever, which have an operative mortality rate of around ninety per cent. If it becomes necessary to operate an acute gallbladder, it should be done practically always in two-stages; the gallbladder drained, but not removed. This takes only a few minutes, and can be performed under local or nitrous oxide-oxygen anaesthesia. A small incision is made, the fundus is extraperitonealized by placing gauze around it, the wound kept spread apart by sutures properly placed, or by a small automatic retractor. At the end of twenty-four hours, or even as early as six hours, if the occasion demands, an opening is made with a cautery point; forty-eight hours later the gallbladder opening is dilated and a tube inserted; if stones are present they are removed with scoop and forceps. If the condition of the gallbladder is such that a perforation or rupture is feared by waiting for a few hours, then with a fifty cc syringe and a small needle, dipped in phenol, the gallbladder is partially emptied to relieve the tension, and forceps are placed on the needle puncture.

Another condition where a two-stage operation is imperative, is one in which there is a persistent and increasing jaundice with little or no pain, and a distended gallbladder without tenderness. In ninety per cent of such patients the symptoms are due to pressure upon the common duct usually as it passes over or through the head of the pancreas. This symptom complex is what is known as Courvoisier's Law. It is usually due to a neoplasm or to an exudate in the head of the pancreas. Recently, with Dr. E. C. Henry, I saw a patient whose Courvosier Syndrome was due to a retroperitoneal sarcoma. These patients should have their gallbladders drained. If inflammatory, this may effect a cure; if due to malignancy, their lives are prolonged and they die more peacefully. Drainage in these patients results in a frightful mortality, due to their intense cholaemia. The first four of such patients upon whom I operated, died. I drained three of them in the usual way, at one operation, and in the fourth, did a cholecystgastrostomy. These deaths were probably due to a too sudden removal from the system of the bile which had been retained in the tissues for a long period. Any large accumulation of fluid (toxic or otherwise) in the tissues or in pre-formed cavities, if present for any length of time, should be removed gradually, as it has accumulated gradually. If it is removed suddenly, disaster often results. If one will extraperitonealize the fundus of the gallbladder and aspirate it with a small needle, twenty-four hours later removing some fifty cc. and repeat this two or three times a day for a week or so; gradually removing the bile from the tissues of the body, the mortality will be nil. There is usually a little drainage of bile from the needle puncture. If it is excessive, a forceps may close the opening.

If an operation is decided upon in either a chronic or a sub-acute condition, the patient should be in the hospital several days before operation, and should have plenty of fluids, fruit juices, etc., and large doses of hexamethylin. The heart and kidneys should be looked after. One of the frequent causes of death is an anuria, therefore, the blood urea and nitrogen should be checked. A cardiogram should be made. We do not have a test for the liver function that will tell anything of value about what its reaction will be to the operative trauma. The anaesthetic of choice, is nitrous oxide and oxygen. One can usually do the operation with this anaesthetic by giving a pre-operative opiate and a hypnotic. Sometimes it is necessary to add ether to get relaxation. I would not quarrel with one who uses spinal anaesthesia but it has its disadvantages.

There have been various incisions advised. The best one as a rule, is the transverse and I will mention a few of the advantages which it has over the longitudinal. The nerves that supply the rectus and the tissues anterior and posterior to it, enter these parts from the outer side, and a longitudinal incision destroys their innervation mediad from the incision. The principle strength of the abdominal wall in this region is the posterior aponeurosis. Its fibres run from side to side, so that a transverse incision divides them parallel to the fibres and a longitudinal one divides them transversely. The wound can be enlarged easily if desired, by extending the incision across the midline or upwards. The blood supply runs longitudinally in the abdominal wall, and more vessels are cut by the transverse incision. But no harm comes from this as the collateral circulation is amply sufficient. In closing the abdomen, the transverse incision is of distinct advantage, as the posterior aponeurosis and the peritoneum approximate each other sufficiently, to be closed easily without tension by a continuous suture of a single strand of catgut. In the longitudinal incision the peritoneum and the fascia are never approximated easily and often a pull of from thirty to fifty pounds has to be used to co-apt the edges. If the patients strain the abdominal walls after operation, as they usually do, by coughing, retching, vomiting or distension, in many instances the sutures in the deep layer will be torn out. In patients whom the surgeon reoperates later, if the longitudinal incision has been used, he often finds dense adhesions of the incision to the underlying tissues, due to the tearing out of the first row of sutures within a few days after the operation. I have never seen a hernia follow a transverse incision, but longitudinal ones in middle-aged fat patients, are often followed by hernia, or at least by a bulging of the atrophic rectus muscle, due to the impairment of its innervation. In closing the transverse incision it is unnecessary to pass sutures through the rectus muscle as a perfect closure occurs by suturing the anterior and the posterior aponeuroses. Sometimes the stomach is distended with gas, interfering with the closure. This can be remedied quickly by inserting a stomach tube. Recently, Balfour advised in operation of the upper abdomen to puncture the stomach with a trochar if its distension interfered. It seems to me this cannot be done as quickly or as safely as passing the stomach tube. After the abdomen is opened, if we are dealing with a chronic gallbladder lesion, one should study the pathology present, and decide upon the operation to be done, whether to remove the gallbladder or to drain it. Then carefully and gently pack away the viscera and the tissues from the gallbladder region. We use large rubber-dam packs as they are not as likely to injure the delicate endothelium which is a factor in the formation of postoperative adhesions.

If an ectomy can be done as safely, then we prefer it. The pathologic condition of the gallbladder influences us very little, if at all in determining which operation to do. In our last hundred operations we have removed the gallbladder sixty-two times and have drained it thirty-eight times. In studying the post-operative results, we find as nearly as we can tell, that they are about the same. The fact advanced by many in favor of ectomy, is that once infected, the gallbladder always remains so. That is true of the infections of any mucous membrane. Many times we have drained a gallbladder with shrunken and thickened walls, with adhesions around it and containing pus, not removing it on account of the difficulty and danger. Many of these patients have good post-operative results and some of our ectomies continue to have trouble.

If an ectomy is decided upon, we inject between the gallbladder and its bed, ten cc. of a ten per cent mercurochrome solution with a rather blunt needle. We do this in an attempt to sterilize the bed of the gallbladder. It also renders its removal easier. We often leave a haemostat on the duct and vessels for forty-eight hours if they are difficult to ligate. If hemorrhage from the cystic artery is troublesome, it can be controlled easily by passing the finger into the foramen of Winslow and using traction on the hepatic artery of which the cystic is a branch. Of late years there has been much discussion as to the necessity for drainage following an ectomy. Many surgeons report an exceedingly low mortality rate after closing without drainage. Richter closes the abdomen without drainage even after removing stones from the common duct. But statistics mean little to me in the choice of an operation. There is a raw surface of the liver left in an ectomy. It is impossible to cover it over completely and to prevent bile leakage. Therefore, I cannot bring myself to close without drainage. I know that a properly placed drain will not cause the death of the patient. The most harm it could do even if unnecessary, would be to cause a few adhesions in a part of the abdomen where they will produce no serious trouble. I also feel that many patients whose abdomens have been closed without drainage and who have died, would have lived if the wound had been drained.

If we decide to do an ostomy, we inject ten cc. of a ten per cent mercurochrome solution through a small needle into the gallbladder, wait a minute, and then remove the contents with a small trochar. The stones are removed if any are present and a tube is placed into the gallbladder.

As to the postoperative complications, the most frequent cause of death is a plastic peritonitis. We have seen this occur following the simplest operations. We should, therefore, take every possible precaution to prevent infection by being most meticulous in the preparation of patients and in carrying out a perfect aseptic technic in the operating room.

Next to peritonitis, anuria is the most common cause of death. It is important to check up the condition of the kidneys before operation. Patients sometimes die thirty-six to seventy-two hours after operation accompanied by distension. high fever, delirium and coma, and are labelled "liver deaths." We are inclined to think that many or all of them had fulminating forms of plastic peritonitis. Heart failure is sometimes a complication and should be treated in the usual way. I have no suggestions to offer in the treatment of the above complications.

Postoperative hemorrhage either internally or through the drainage tube is sometimes troublesome and occasionally is the cause of death, especially when one is compelled to operate in the presence of jaundice. In this complication the hemorrhage usually can be controlled by producing a "sequestration anaemia." A large amount of the blood of the body is forced into the arms and legs by using Bier constrictions. An elastic tube is placed on one arm and one on each thigh as high up as possible, tightly enough that the pulse in the distal arteries can just be felt. On the other arm a sphygmomanometer is attached. I have used this since 1907, when an article upon this subject by Dawborn of New York appeared in the Annals of Surgery. He spoke of its great value in brain surgery and in internal hemorrhages. He introduced the term "sequestration anaemia" and stated that the results obtained were due to the lowering of the blood pressure.

After doing my first operation, using "sequestration anaemia," I found on removing the constrictions that there was little or no bleeding. If the hemostasis had been due to a lowering of blood pressure, then on the removal of the constrictions, the normal amount of bleeding should have occurred. I experimented with a few patients and found no drop in the pressure following "sequestration anaemia." Since that time I have done many operations making use of "sequestration anaemia," and recording the pressure every five minutes, and there has been little or no drop in the pressure, but usually a little rise. I wrote these facts to Dawborn. The hemostasis is produced by the lessening of the caliber of the vessels, through the action of the vaso-motor nerves, to compensate for the loss of blood. The tension remains the same.

Lilienthal in recent issues of the *Journal of the American Medical Association* and of the *American Journal of Surgery* tells of the value of "sequestration anaemia" in certain operations, and in inaccessible hemorrhages. He states "it is due to an immediate and great reduction of systemic blood pressure." He further stated that he had made a series of observations upon normal persons before the clinical society of Mt. Sinai Hospital, and showed that the systolic blood pressure was reduced to forty and sometimes sixty mm of mercury after applying the ligatures.

After reading Lilienthal's articles, I produced "sequestration anaemia" in ten of our nurses who had systolic pressures ranging from ninety-two to one hundred twenty. In one there was a drop of four mm, in four there was no change and in five there was an elevation from two to eight mm.

I then consulted Dr. Gunther, the Physiologist of the Nebraska University Medical College, as to the relation between loss of blood and blood pressure. He showed me a chart in McLeod's hysiology where the relationship between the loss of blood and blood pressure had been worked ut, showing that approximately ten to fifteen per cent of the total blood may be lost, if not lost suddenly, without any change in the pressure.

To us as clinicians, it is more or less an academic question but if Lilienthal's findings are correct, New Yorkers are different from Nebraskans, but we, at least, conform to the laws of physiology. We have found this a most excellent remedy in postoperative bleeding and in internal hemorrhages from the gastrointestinal tract, chest and brain. We use it in operations where bleeding is difficult to control or where many vessels must be ligated.

You will have to see or to do an otherwise bloody operation to appreciate the value of "sequestration anaemia." It minimizes the loss of blood, shortens the time of operation and lessens the amount of anaesthetic used, and the number of ligatures buried. All these lessen shock, and the danger of infection. An unusual postoperative complication occurred in three of our patients in the past four years. Within twenty-four hours after operation, they developed severe abdominal pain, distension, collapse, and a profuse hemorrhage from the bowel. Death occurred in seventy hours or less. I shall describe the last patient briefly.

She was a patient of Dr. M. C. Green—operated June 21, 1933—had been in hospital four days before operation, and was apparently a good operative risk. A transverse incision was used. The gallbladder was small, was buried in adhesions and contained no stones. We thought its removal could be done as quickly and as safely as a drainage, so an ectomy was done. Ten hours after operation she passed brick red blood per rectum and had great pain in the lower abdomen. She died twelve hours later having had eight large bloody evacuations in that period.

The husband requested Dr. Schleier to do an autopsy and I don't blame him for he had reason to suspect that there might have been a flaw in the technic of the operation. Drs. Schleier and Newell did an autopsy and the operative field was as it should be. They found a hemorrhagic infarct with coagulation necrosis of most of the transverse colon, all of the descending colon and the upper part of the sigmoid. There was no thrombosis of either the mesenteric artery or vein but in the mesentery near the middle of the transverse colon was some ecchymosis. Probably the thrombus was loosened from the vein and carried into the liver before death. The other two cases were very similar, one dying in fifty-two hours and the other in seventy hours. On one we obtained an autopsy and found practically the same condition as the one just described. None of these patients was syphilitic, atheromatous or had a cardiac lesion.

To avoid this complication, one should prevent any injuries to the mesenteric vessels by using extreme gentleness in the separation of adhesions and in the use of abdominal packs and retractors.

Dr. John E. Summers in 1906 in his presidential address before the Missouri Valley Medical Society gave an excellent paper upon "Postoperative Gastric and Intestinal Haemorrhages." He reported one case with haemorrhages from the bowels with symptoms and autopsy findings practically the same as ours. This complication followed a kidney operation. He gave an excellent account of the etiology and pathology of the condition and came to the conclusion, rightly I think, that trauma to the mesenteric vessels by manupulation or pressure was the cause.

CONGENITAL SYPHILIS IS PREVENTABLE*

WALTER CLARKE, M. B.; Ch. B.; L. R. C. P., Edin.,
New York City.

I am reminded of the young parson giving his first sermon. Having hesitation about the quality of his work, he asked his father, who was an old and experienced preacher, to go along to listen and criticise. After the sermon was over and they were back home, the son said, "Father, tell me frankly what you thought of my sermon."

The old man hesitated. His son urged him. Finally he said, "My son, I have three things to say about your sermon. In the first place, you read it. In the second place, you didn't read it well. In the third place, it wasn't worth reading."

The present situation is at least like that of the parson in that what I have to say partakes a little of the nature of a sermon. And I am going to read certain sections, like the preacher who evangelizes his audience and calls sinners to repentance. There are probably no sinners in this audience. Unfortunately for the preacher, as well as for all those who are trying to advocate new ideas, the people who most need them are usually not in the back benches. But I hope that some of these ideas may stimulate those who are here to discuss them with their absent colleagues, when they meet them.

Some of you have seen the exhibit I have outside which displays photographs of a considerable variety of lesions of congenital syphilis.

The prevalence of congenital syphilis, the cost and inconvenience of its treatment and the comparatively unsatisfactory results obtained makes the recognition and care of syphilis in pregnant women one of the most important of medical procedures. One of the most brilliant of medical achievements is the prevention of congenital syphilis through the treatment of pregnant syphilitic women. Prevention is comparatively easy, while the cure of congenital syphilis is difficult for reasons which are apparent when one considers that in stillborn fetuses, where syphilis is the cause of intrauterine deeath, the treponema pallidum can be found in practically every tissue. Dr. James R. McCord has been able to find the organism of syphilis in kidney, skin. thymus, liver, spleen, heart, and adrenal, of syphilitic stillborn fetuses.

---

*Presented at the annual meeting of the Nebraska State Medical Association, Omaha, Nebraska, May 23-25, 1933.

In recent years many studies have been made in the United States and abroad to determine what percentage of pregnant women are infected with syphilis. Such studies have been almost exclusively limited to dispensary and hospital patients. Studies published by Moore of Hopkins indicate that in the private practice of obstetrics from 0.3 to 2 per cent of pregnant women were found to have syphilis, but it is true that too few private practitioners make routine use of a blood test in connection with their obstetrical cases(1). Physicians are often fearful of giving offense to private patients if they suggest a Wassermann test, except in those instances where the history and the clinical findings point clearly to syphilis as a probability. The susceptibilities of dispensary and hospital patients are given less consideration, and in an increasing number of clinics the routine examination upon entrance to the prenatal service includes the Wassermann or Kahn test. The results of these tests vary according to certain conditions, the most obvious being race. In the United States, it has been found that Negro women present syphilis as a complication of pregnancy 3 or 4 times as frequently as white women. We conclude from our statistical studies that syphilis can be discovered in an average of 10 to 12 per cent of pregnant women of the "dispensary class" and that it is especially common in Negro women.

Treatment for cases of syphilis in pregnancy if discovered is usually available in the United States. Facilities exist in almost every city for the free diagnosis and treatment of indigent cases, and it is commonly possible to induce a pregnant woman to undertake and continue treatment for the sake of her child if not for her own benefit. Our shortcomings are not in regard to the provision or even the carrying out of treatment of syphilis in pregnancy, but rather they lie in our failure to diagnose syphilis in pregnancy. It was found in studies compiled by the American Social Hygiene Association that the prenatal clinics which included routine blood tests for syphilis found from 3 per cent to 23 per cent of their patients were syphilitic, varying according to the social and economic status of the patients, while those that did not include a blood test found very few syphilitic.

Over a three-year period a total of 19,411 prenatal cases were cared for by the ten child hygiene centers and some other clinics of a certain large city. None of these employed a routine blood test to discover syphilis. During the time only 12 syphilitic infections were found, six hundredths of one per cent. Similar figures were noted from five clinics which did utilize the routine Wassermann test; among 2,559 prenatal patients, over a three-year period, 112 cases, or 4.4 per cent were found syphilitic. It is reasonable to suppose that the Wassermann or other blood test routinely employed in these ten child hygiene clinics might have brought to light in three years a total of 331 cases where antisyphilitic treatment might have been given with benefit to both the mother and her infant.

The sooner it is brought home to the medical profession that the diagnosis of syphilis in pregnancy is frequently impossible without the aid of a blood test, the sooner progress will be made in preventing congenital syphilis. Syphilis in pregnancy is commonly without clinical manifestations. though signs of syphilis are seen oftener in primiparous than in multiparous women. Information from patients with regard to previous infection is often misleading or even intentionally false and, furthermore, women are frequently unaware of infection, since the primary lesion is often hidden from their view. In the case of multiparae the history of previous pregnancies is sometimes suggestive and leads the clinician to search carefully for syphilis. However, it is not usual for medical attendants, in the rush of a prenatal clinic service, to discover all the facts, clinically and historically, which would indicate a possibility of syphilis, and even though all such facts are brought to light they are in many cases inconclusive and misleading. The experience of the Johns Hopkins Hospital in this matter is enlightening. Of all the cases of syphilis referred from the obstetrical clinic to the syphilis clinic, 95 per cent were discovered by means of serological examination alone, the clinical study and the history being negative(2).

Why syphilis in pregnancy is latent remains a mystery. It is known that for certain organisms the bactericidal properties of the blood increase in pregnancy. It has been suggested by Ruth that the attenuation of the virus in syphilitic pregnant women is due to the spirillolysis of the organism through the action of chorionic ferments. Whatever may be the true explanation of this undoubted diminution of the clinical manifestations of syphilis in pregnancy, the fact remains that neither on historical nor on clinical evidence can syphilis be diagnosed in every case, and the blood of every pregnant woman should be subjected to laboratory examination, at least once, and the test should be repeated in subsequent pregnancies. Our studies in New Orleans, indicated a fall in the percentage of syphilis discovered in pregnancy, where treatment of women in successive pregnancies is carried out. The figures are as follows: 1928, 6.7 per cent; 1929, 4.4 per cent, and 1930, 3.2 per cent.

The best practice, not only in prenatal clinics but also in syphilis clinics, now includes both the Wassermann and Kahn or other blood tests. Pernatal clinics should always employ two tests as a routine procedure, submitting the same sample of blood to both methods of examination. Furthermore, all cases which present any facts in the history of previous health or pregnancies or any clinical signs which lead the medical attendant to suspect, in spite of a negative blood test, that the patient may possibly have syphilis, should be submitted to repeated Wassermann and Kahn tests at suitable intervals, and in such cases a test of the cerebrospinal fluid may well be made. Since some cases of known syphilis remain negative to the Wassermann and other similar tests, a diagnosis may sometimes be arrived at on the basis of the history and clinical findings alone.

It is admitted that the "false positive" Wassermann is an occasional occurrence in pregnancy but it is probable that the "false positive" is not so frequent as some observers have supposed. The clinician, after protecting his diagnosis by two blood tests, may safely assume that women who show definite positive reactions to both tests are syphilitic, and he may and should proceed to treat them accordingly. If a case gives a "false positive" to both tests (and this will be very rare, indeed) no harm will be done by the therapeutic measures employed, and the diseased woman may be given the opportunity to bear healthy children free from syphilis. This, it is suggested, is the safe and rational policy to follow.

It is believed that syphilis is transmitted from the mother to the fetus about the fourth month of pregnancy and that transmission is through the placenta. The treponema pallidum is one of the few organisms which can pass the barrier of the placenta. This offers some explanation of the fact which has been observed clinically, that in order to be efficacious, the treatment of syphilis in pregnancy should begin not later than the fifth month.

These facts present additional reasons for the great effort which is being made in the United States and in many European countries to bring pregnant women under medical supervision early in pregnancy. Treatment of syphilis in pregnancy begun after the fifth month is sometimes productive of a healthy child, but the chances of success diminish as the patient draws near to the end of gestation. Diagnosis should be early in pregnancy; treatment should begin immediately after diagnosis, and should be continued until the day of delivery. If treatment has been adequate, the results are from 80 to 90 per cent or more satisfactory, that is, living and healthy children, apparently without syphilis.

Syphilis is a familial disease, a point which should not be forgotten by those who attend women in pregnancy. In all cases in which syphilis has been diagnosed in pregnancy and in all cases of suspected syphilis, the husband should be carefully examined and should be brought under treatment if found to be infected. The children of a syphilitic woman should be examined and those found to be infected should be treated. Many a puzzling case of suspected syphilis in a pregnant woman has been cleared up through the examination of the woman's husband and previously born children.

McCord out of his wide experience and careful research says, "I believe that babies born of mothers with serological evidence of syphilis are syphilitic and prolonged study and work will prove them so in a great proportion of cases."(3) It is the opinion of many modern authorities that the pregnancy of an untreated syphilitic woman ends in a congenitally syphilitic child, whether or not the child survives the period of gestation. The postulate of Kassowitz that with the lapse of time, the virus of syphilis gradually becomes attenuated and that eventually, after a long series of stillbirths and syphilitic children, a healthy child may be born, is by many authorities no longer accepted. Gammeltoft(4) and others have presented evidence which appears to make the Kassowitz postulate untenable. David Lees remarks that "Diday's Law of Decrease," or the gradual diminution of the virulence of transmission in pregnancy, until finally a healthy child is born, does not always hold good.(5) This, however, is of theoretical interest only, in view of the rule that any woman who ever had syphilis should always be treated in every pregnancy. Neglect of this principle has led to more than one disaster in the life of a woman who believed that she was cured of syphilis, and practitioners should only with the greatest caution depart from this rule.

The researches of American and other students of syphilis in pregnancy, have resulted in a substantial agreement with the statement of J. Whitridge Williams that "Syphilis constituted the most important single factor concerned in the causation of fetal death and was responsible for 34.4 per cent of all the deaths occurring between the period of viability and the expiration of the first two weeks of the puerperium."(7) Commiskey found 27 per cent, McCord 45 per cent (colored patients), Sage 23.8 per cent stillbirths, and Holland 16 per cent of fetal and neonatal deaths were due to syphilis in pregnancy.

One of the most striking demonstrations of the results of treatments of syphilis in pregnancy was presented by Laurent(8) on the basis of his experience at the St. Etienne Hospital, St. Etienne, France. The histories of a group of 213 pregnant syphilitic women were studied before and after they had treatment. Without treatment the pregnancies occurring resulted as shown in Chart 2. His experiences may be summarized and are illustrated graphically in the Charts 1 and 2.

CHART 1.—DIAGRAM SHOWING THE RESULTS IN UNTREATED SYPHILITIC PREGNANT WOMEN

563 PREGNANCIES

Macerated Fetuses	15.0%
Miscarriages	33.7%
Dead Before Three Months	24.7%
Alive at Three Months	26.5%

Of the 26.5 per cent fetuses alive at three months in the pregnancies of the untreated syphilitic women, it is probable that at least one-half will die in the first five years, and many of those surviving infancy will show the stigmata of congenital syphilis. Only a few of them will be apparently normal.

With treatment the pregnancies of the same woman resulted as shown in Chart 2.

CHART 2.—DIAGRAM SHOWING THE RESULTS IN TREATED SYPHILITIC PREGNANT WOMEN

161 PREGNANCIES

Macerated Fetuses	0.4%
Born Dead	5.0%
Miscarriages	2.5%
Alive at Three Months	91.9%

Of the 91.9 per cent of fetuses alive at three months in the pregnancies of the women receiving treatment it is possible that all will be healthy, non-syphilitic children.

We have studied on the ground McCord's results in his Atlantic Clinic, and they show a similar saving of child life and health. His figures are shown in Chart 3.

CHART 3.—RESULTS OF ANTISYPHILITIC TREATMENT DURING PREGNANCY

	Treatments Received by Mother		
	None	Less than 6	More than 6
Number of Cases	137	94	95
Pregnancies Ending Disastrously (Stillborn or dead in early infancy)	80%	34%	9%
Baby Born Alive	30%	80%	93%
Baby Stillborn	70%	20%	5%
Pregnancy Full-Term	35%	69%	93%
Pregnancy Premature	65%	31%	6%
X-ray Showed Syphilis in Long Bones of Infant	70%	38%	3%
Cord Wassermann Positive	44%	18%	6%
Syphilitic Placenta	69%	31%	2%

Gammeltoft, when I visited him in Copenhagen, showed me figures for his clinic, which indicated results 85 per cent satisfactory.

The experience of others in America, Great Britain, Germany and elsewhere in the treatment of syphilis in pregnancy have been equally satisfactory. In a study by Williams of the children of syphilitic mothers who had undergone treatment it was found that 83 per cent of such children were living and were in excellent physical condition. Of syphilitic women treated in Copenhagen by Gammeltoft from 80 to 85 per cent gave birth to healthy children, the variation in number depending upon the method of treatment employed.

Since treatment should begin as soon as syphilis has been discovered, the earlier in pregnancy diagnosis is made the better for mother and child. While this is true, yet in general, the week from the middle of pregnancy until delivery comprise the most strategic period, and the quality of the results will depend principally upon satisfactory treatment during this period. It scarcely need be added that for the sake of the mother, treatment should be continued as soon after parturition as practicable and should then be according to the proper plan of treatment of a syphilitic female in the particular stage of the disease in which the patient may be found. Nevertheless it is to be borne in mind that, even though the woman continues treatment until she is "cured" according to a satisfactory "test of cure," she must be suspected in any and every subsequent pregnancy.

What should be the treatment of a pregnant syphilitic woman in order to prevent congenital syphilis in her child? The observation that pregnant women bear treatment very satisfactorily has often been made, and pregnancy is for the mother as well as the child, an advantageous time for treatment. There are numerous methods of treatment of syphilis in pregnancy and it is not possible with our present knowledge to designate a particular plan of treatment as distinctly the best. Gammeltoft secured the best results in his cases by the use of salvarsan both before and during pregnancy.(4) Laurent says, "The best treatment, in our opinion, is intravenous injection of neosalvarsan, the results of which have been for us far superior to those obtained by the use of mercury or bismuth. Neosalvarsan seems to be particularly well tolerated during gestation, and we have never had an accident with it during a pregnancy(8). McCord, in his clinic, used one of the "914" preparations together with mercurial inunctions, having found that his patients are loath to submit to intramuscular medication.

In general one may safely proceed with the treatment of a syphilitic pregnant woman upon a plan suitable to the individual were she not pregnant considering, however, that certain organs and especially the kidneys may be under considerable strain. Personally I recommend moderate weekly doses of neoarsphenamine up to 6 or 8 doses followed then by twice weekly doses of bismuth up to 6 or 8 doses. Frequent small doses are better than large infrequent doses. Where treatment is begun late in pregnancy it is well to emphasize the neoarsphenamine and reduce or omit the heavy metals. I would again stress the advisability of adhering to moderate doses. It is, in my opinion, rarely justifiable to go above .45 Gm of neoarsphenamine in the treatment of syphilis in pregnancy and the dosage of bismuth should not exceed .2 Gm. It will be obvious, of course, that a careful watch of the urine must be kept in order to detect any kidney disturbance. Persistent albuminuria is an indication for the discontinuation of the arsenical treatment. If after cessation of treatment, albuminuria still continues it may be assumed that the condition is due to factors other than treatment and medication may be cautiously renewed. It has been found that bismuth is less irritant than mercury to the kidneys.

It is an impressive fact that congenital syphilis lies almost wholly within our control if appropriate methods can be applied. It is, first of all, necessary that full advantage be taken of modern diagnostic methods in order to discover syphilis in pregnancy. Secondly, it is necessary that all cases of syphilis in pregnancy should be brought under early control and should be treated persistently and intensively during this period. When these methods are applied to all cases of syphilis in pregnancy, congenital syphilis with its immeasurable disasters, personal and social, will soon cease to exist.

REFERENCES

1. Moore, Joseph Earle: Syphilis and the Wassermann Reaction in the Private Practice of Obstetrics, Ven. Dis. Information 11:243-251, June 20, 1930.

2. Keidel, Albert: Economic Aspects of the Management of Syphilis. Baltimore, Archives of Dermatology and Syphilology, March, 1932.

3. McCord, James R.: A Study of Three Hundred Pregnant Negro Women Having a Four-Plus Wassermann, American Journal of Obstetrics and Gynecology, June, 1925.

4. Gammeltoft, S. A.: Syphilis and Pregnancy, American Journal of Obstetrics and Gynecology, June, 1928.

5. Lees, David: Practical Methods in the Diagnosis and Treatment of Venereal Diseases. Edinburgh, Scotland, E. and L. Livingston. 1931.

6. Personal Communication to the Author. November, 1929.

7. Williams, J. Whitridge: The Influence of the Treatment of Syphilitic Pregnant Women Upon the Incidence of Congenital Syphilis, Bulletin of the Johns Hopkins Hospital, November, 1922.

8. Laurent, Charles: Prophylaxis of Hereditary Syphilis, Urologic and Cutaneous Review, 33:242, April, 1929.

CLINICAL CONTROL OF CHRONIC HEMORRHAGIC STATES IN CHILDHOOD

In his article (*Journal A. M. A.*, Jan. 20 and 27, 1934), I. Newton Kugelmass, New York, states that hemorrhagic states are unitary and unique. Their manifestations are as individual as the particular parent, as varied as the determining disease, and as widespread as are the offended organs and tissues. And yet they show few symptoms and fewer signs to be ever adequate for diagnostic differentiation without further scientific study. The author discusses the essential diagnostic procedures for hemorrhagic disturbances, a new classification of hemorrhagic states, dietary control of chronic hypothrombinemia, treatemnt of types of thrombocytopenic purpura, evaluating symptomatic thrombocytopenic purpura, vascular hemorrhagic diseases, and under hereditary hemorrhagic diseases he discusses hereditary hemophilia, familial thrombocytopenic purpura, hereditary thromboasthenic purpura, hereditary hemorrhagic telangiectasis and transitional hereditary hemorrhagic diseases.

LARYNGEAL PAPILLOMATOSIS

PHILIP L. ROMONEK, M. D., F. A. C. S.,
From the Department of Rhino and Otolaryngology of the University
of Nebraska College of Medicine,
Omaha, Nebraska.

Papillomata of the larynx considered only as a self-limited condition by many, are responsive to treatment and can be eradicated without waiting for self destruction.

It seems to be an erroneous thought by many general physicians, and pediatricians, that children developing papillomata of the larynx are helpless as to treatment and that time will either "cure or kill the patient."

A mother, who having heard about the complications that accompanied the case to be described in this paper, stated that she became very interested in this case, because she had a child that had died from papillomata of the larynx, and she desired to know if such conditions can be treated with good results.

In reviewing the literature I have not found any case that developed so many complications and still recovered with a speaking voice as my cases to be described.

HISTORY OF CASE

P. Y., age 2 years, white, female, was admitted to the University Hospital October 6, 1930, with difficulty in breathing and inability to speak above a whisper. The history as obtained from the mother, was that the child did not breath well at an early date, the child's cry was never loud and forceful. At about two months of age the mother noticed that the child's breathing was laborious. At one year of age when the child began to talk, mother observed that the child never spoke above a whisper. This continued until four months prior to entrance to the hospital, when the breathing became very difficult and the family physician was consulted. He advised immediate hospitalization, "because of a possible congenital deformity."

Past Illness—Child had been exceptionally well outside of the respiratory defects. T.B.C., negative. Family history, negative.

On October 6, 1930, child entered the University Hospital and a bronchoscopic examination was made which showed multiple papillomata attached to both cords and filling the laryngeal cavity. There were also numerous growths extending about the top of the arytenoids. Four days later, October 10, 1930, a bronchoscope was passed and as much of the papillomata as could be seen was removed and sent to the laboratory for diagnosis.

Report by Dr. Eggers, Pathologist.

Microscopic examination: "The material consisted almost entirely of a papillary overgrowth of stratified squamous epithelium, the later in great excess with barely enough central stroma to afford its support.

Diagnosis: Benign Papilloma.

The child continued along nicely for a month and a half, then symptoms with dyspnea reoccurred and a low tracheotomy was performed. Four days later, December 2, 1930, a bronchoscope was again passed and the larynx was again cleaned of papillomata. A few weeks later, December 17, 1930, an examination showed that the papillomata had regrown, in fact they appeared more than before the last removal. The masses were again removed. Further removal was performed on January 2, 1931, and January 23, 1931. The child was then discharged from the hospital. She was again seen five months later May 13, 1931, and was readmitted with similar symptoms. It was just at this time that Dr. Hasslinger of Vienna was giving his lecture course at the University and the child was turned over to him. The laryngeal examination at this time was certainly discouraging for it showed the recurring papillomata had solidly filled the entire larynx, had encroached on to both ary-epiglotteal folds spread over the epiglottis and had extended to the base of the tongue. It certainly appeared a hopeless task for removal. Dr. Hasslinger passed a bronchoscope and after working for some time removed as much as he could and gave a very poor prognosis as to the outcome. After a few days the child could breath freely and was feeling quite well, and she was then discharged from the hospital.

The patient was again readmitted in the following September and some more papillomata were removed in the same manner. Two weeks later some more were removed and this time diathermy was used to cauterize the base about the arytenoids. A fistula into the esophagus resulted which gave us some discomfort for a time but finally this healed up.

One month later on November 10, 1931, an epidemic of diphtheria broke out in the children's ward at the hospital and of course this patient's culture came back with diphtheria positive and had to be treated for the same.

One month later on December 12, 1931, another careful laryngeal examination was made, this time the larynx showed no papillomata anywhere. There were marked bands of adhesions stretched across from cord to cord and extending from the anterior commissure down to three-fourths distance on the cords. An attempt was made at this time to cut these adhesions. An O'Dwyers intubation tube was then inserted between the separated cords; this, however, did not hold as the child soon coughed up the tube. Three months later another attempt to insert the intubation tube was made after splitting the adhesions and the intubation tube was again coughed up.

Our problem now was to restore the child's voice. Two attempts had been made in splitting the adhesions and the introduction of intubation tubes, both had failed. Our next course was to correct the adhesions by the open method.

On April 22, 1932, I performed a thyrotomy for the removal of the adhesions according to the Schmiegelow(1) technique.

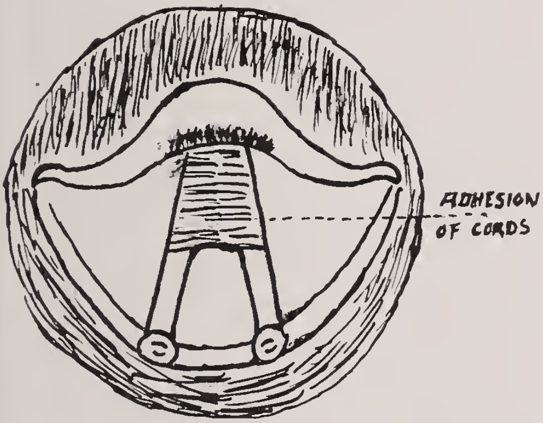


Fig. I. Partial Synechia of the vocal cords caused by operative treatment for multiple papillomata.

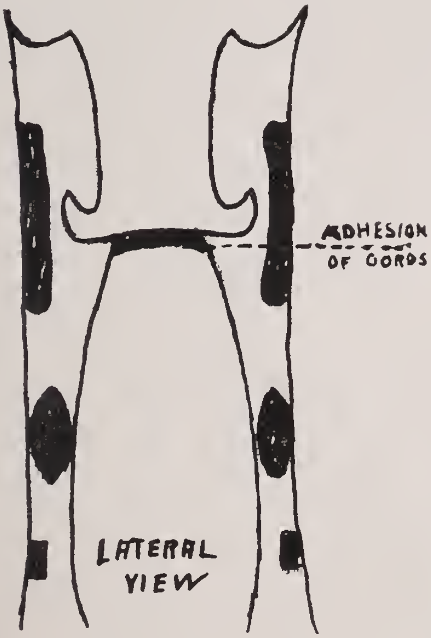


Fig. I-A.

On opening the larynx a careful inspection showed no papilloma; a band of adhesions had regrown and were stretched between both cords. These were severed through the center and a small rubber tube about one-half inch in length was placed between both cords. This tube was sutured in place with a fine silver wire, the wire running straight through the anterior half of the larynx.

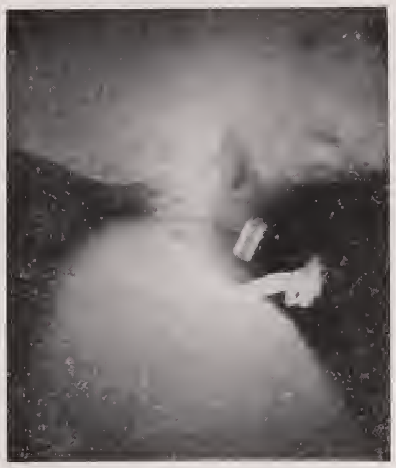


Fig. II. Side view of rubber tube in larynx and tracheotomy tube below.

Three weeks later this wire and rubber tube were removed. An examination showed no further adhesions and the cords moved freely. The patient was discharged from the hospital, still wearing the tracheotomy tube. Her voice was rough and husky.

Seven months later, July 9, 1932, the patient returned to the hospital with a story that for the past three weeks there had been a very foul odor about the tracheotomy opening. On removing the tracheotomy tube, the cross bar to which the tube was attached came away very easily and the curved tube portion was missing. I could not believe that the child had aspirated the tube.

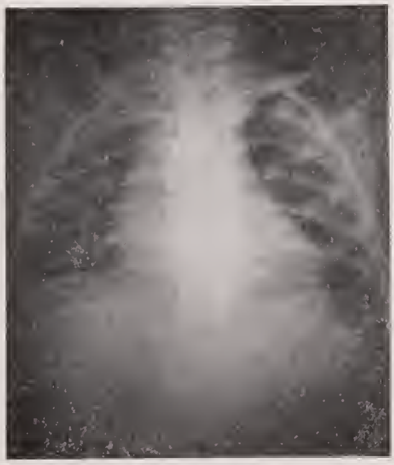


Fig. III. Distal end of tracheotomy tube in bronchus.

However an x-ray was taken and sure enough the tube was situated in the bronchus near the bifurcation as shown in above. How long it had remained there I could not say. A bronchoscope was passed at once down through the tracheotomy opening and the tube grasped and removed. The patient made an uneventful recovery. St. Clair Thomson(2) reports that the life of a silver tracheotomy tube is about three to four years. M. C. Parker(3) states that the effective life of a tracheotomy tube varied enormously. In some instances they had to be renewed in considerably less than three years, while in other cases they lasted much longer. Much seemed to depend on the nature of the secretions bathing them in each particular case.

A few days later another laryngeal examination was made. The larynx appeared clean—no papillomata anywhere — no adhesions between cords. The tracheotomy opening was then closed by a plastic operation and the patient was discharged from the hospital in good condition. Her voice at this time assumed a low hoarse rasping tone but her speech was comprehensible to all.

ETIOLOGY

The true papilloma is most frequently found in young children and is sometimes congenital. The growth may arise from the vocal cords or from any part of the mucous membrane of the epiglottis, larynx, or trachea. Its most striking characteristic is the rapid recurrence after removal and the tendency to transplant itself to any adjoining area of the mucous membrane that may be injured during operation.

The records of the Massachusetts General Hospital(4) indicate that the incidence of papillomata of the larynx is approximately one to one thousand in children under 14 years of age. Rosenberg in 1896, Frankels Clinic in Berlin reported sixteen cases of papillomata of the larynx out of 5808 children under 13 years of age. Schrotter(5) saw only 10 cases among 7324 children under 10 years. Only 23 cases were seen in Chiaris(6) Clinis, Vienna during 23 years.

The growth may appear at any age and according to Gerhard(7) approximately one-fifth of the cases in young children are congenital.

A further review of the literature indicates that the mortality of papillomata of the larynx in children under five years of age is equal to or greater than that of carcinoma of the larynx in adults.

PATHOLOGY

Papilloma is the most frequent benign neoplasm of the larynx. There are two main types:

1. The simple or single papilloma.
2. Multiple or villous type of papilloma.

The single type consists of a single projection from the adjoining tissue, composed of a central core of connective tissue and covered with stratified squamous epithelium.

The villous type consists of innumerable small projections, beads, or granular like in appearance, arising from a central base and covered with a similar epithelium of varying thickness.

Multiple papillomata have a strong tendency to repullulate, not only at the original site but in remote locations of the larynx, fauces, nose and the alveolae of the lungs. Hitz(8) and Oesterlin(8) reported a case of a child two years old having multiple papillomata of the larynx in which at autopsy the lungs showed many small cavities varying in size, some as large as hazel nuts. The walls of these cavities were covered with fine granules about the size of millet seeds. Microscopic sections showed these granules to be of same structure as that of the papillomata in the larynx. This would suggest that all of these tumors in the lung had the same common origin namely, that the tumors growing too rapidly in the larynx were detached and carried into the bronchi by aspiration. They passed the larger bronchi but were caught in the bronchioli obstructing their lumina. In this way they became implantation metastasis and began to grow into the alveoli. Letulle(9) and Jacquelin(9) have called this type of metastasis—"Metastasis Aeriennes" or Aerial Metastasis. Drs. Hubbard(10) and Galbraith(10) state "that the very juices of the neoplasm may be the agency of transplantation," and therefore the elimination of traumatism in the removal of papilloma to my mind should be considered a very vital factor.

SYMPTOMS

Dyspnea or difficult breathing is the paramount symptom of papilloma of the larynx. This is the first symptom that causes the mother to become alarmed. With dyspnea we get hoarseness which at times may become forced speech. With dyspnea we may also get restlessness, increasing respiratory rate, stridor, indrawing at the suprasternal notch and an ashy gray pallor. Inspiration may be more obstructed than expiration and vice versa. The appetite usually is poor; the child declines food because he is too busy getting in enough air to sustain life.

DIAGNOSIS

The diagnosis depends upon the above symptoms of dyspnea, with the characteristic indrawing at the suprasternal notch. The macroscopic finding of the neoplasm on direct laryngeal examination and the microscopic findings following biopsy. The important thing to emphasize here is the diagnosis of obstruction. When the obstruction is in the larynx or the cervical trachea, the unsatisfied negative pressure in the thorax causes an indrawing of the soft tissues where they are unsupported by bone or cartilage. The locations of these indrawings are:

1. The suprasternal notch.
2. The supraclavicular fossae.
3. The intercostal spaces.
4. The epigastrium.

The most important of these is the indrawing at the suprasternal fossae, next is the epigastric indrawing, especially in children. The deep depression going down back of the manubrium at each inspiration always means obstruction above that point; and preparations for tracheotomy should be made at once. The indrawing at the suprasternal notch is diagnostic of obstructive laryngeal dyspnea. It is never seen in the dyspnea of asthma, pneumonia or other diseases, mediastinal, cardiac or pulmonary, unless laryngeal complications are present. In addition to the cardinal sign there are two accompanying signs that are important, one is stridor and the other restlessness, both are signs of danger and mean air hunger. Sedatives sometimes given for restlessness hasten death. Cyanosis is late and may be absent to the end. Ashy-gray pallor or leaden color is diagnostic. The anxious face of the child is typical, impending death by asphyxia. There is not a moment to be lost in presence of such symptoms. To delay tracheotomy would be fatal.

TREATMENT

Tracheotomy alone will never cure papillomata of the larynx regardless of the thought that papillomata is a self limiting disease and the use of rest is the most vital factor.

Clinical reports of laryngologists give evidence that the methods in practice have not reached that stage of perfection which warrants standardization of technic. Ideal results cannot be claimed for any particular method. Our utmost desire should be the restoration of the respiration and as perfect phonation as possible. The method of treatments can be classified as follows:

1. Operative—Extra and Endo-laryngeal.
2. X-Ray and Radium.
3. Electro-cauterization and fulguration.
4. Therapeutic methods.

Endo-laryngeal: McKinney(11), Lynch(12), Dan McKenzie(13) and Albrecht(14) stated that they had excellent results under Suspension Laryngostomy. Jackson(15) says, "The best method of cure of multiple laryngeal papillomata is to scalp off the projecting parts of the growths without any attempt at removal of the base repeating the procedure as often as repullulating buds appear." Hasslinger passes the bronchoscope through which he plucks off the papilloma until the entire mass has been removed. I have used this technic and have found this to be the better method, repeating the removal as often as papilloma return. Laryngo-fissure has had extensive use in the past. Semon(16) mentions a case in which no fewer than 27 thyrotomies had been performed on the same patient with recurrence of growth in each occasion.

Electro-cauterization and Fulguration: Actual or chemical cauterization should be avoided. They do not prevent recurrence and will result in scarring and strictures. Harmon Smith(17) says that fulguration is better than operative removal but has been disappointing as a permanent and positive relief. Lynch(12) used fulguration to a considerable extent and found it better than operation.

Other Therapeutic measures: Delevan and others reported good results from the local application of absolute alcohol to the affected parts. Lynch(12) obtained good results from the local application of acid nitrate of mercury. B. Katz(18) reported good results in 3 cases with the use of Calcined Magnesia. Professor Sloss and Dr. Reding believe that this remedy re-establishes the deficient cellular metabolism by adjusting the equilibrium of the mineral elements of the body cell. As I said before, B. Katz(18) had very good results with calcined magnesia in three cases, however, he used surgery first to remove the papilloma and followed this with the calcined magnesia. His method was to use it for a period of three to four months in increasing doses 4.0 to 8.0 grams daily. A short interval of rest of from one to two weeks is then given and this in turn is followed by another three to four month period of calcined magnesia in smaller doses. I have tried this on one case but with practically no results.

Radium: Some observers reported excellent results while others as Tucker(19) saw cases where growth was stimulated and others where extensive necrosis of the cartilage ensued with consequent collapse of the larynx. Gordon New(20) of the Mayo Clinic in 1921 stated that during the past six years, radium was used inside the larynx and outside the neck with better results than any previous method. I have used radium from 75 to 100 milligram applied from 45 minutes to one and one-half hours. This method gave me better results than mere surgical removal. It did not prevent recurrence, as several applications had to be made. However, it did shorten the rapid regrowth and resulted in practically little use of surgery. I further believe that the proper use of radium, removes the papilloma and prevents the juices of these papillomata or small papillomatous off-shoots from acting as agencies for transplantation.

X-ray: Some observers such as John Dunn(21) claim very good results with x-ray therapy. Dunn uses 1/2 to 3/4 milliampers 4-5-in. spark gap 10 inches from the skin. He gave 10 minute exposures daily on alternating sides of the neck, giving 13 exposures. Solomon(22) and Blondeau(22) report three cases with good results. Foster three cases with good results. In my practice I have not had such good experience with x-ray treatment.

In conclusion, may I emphasize the fact that patients having a repeated or chronic hoarseness especially with dyspnea should have a careful laryngeal examination. An indirect laryngoscopy with a laryngeal mirror is sufficient in adults, but in children a bronchoscopy should be used.

Papillomata of the larynx should not be considered as a self-limited disease as the danger lies in waiting too long. Radium with surgery has given me my best results.

This case has taught me a great lesson, that is, that tracheotomy tubes should be silver and of the best material as cheap tubes will corrode and can be aspirated causing serious complications.

(Bibliography in Reprints)

RATS: A SATISFACTORY TECHNIQUE FOR EARLY PREGNANCY TESTS*

RUTH WARNER, M. D., and GRACE LOVELAND, M. D.,
Lincoln, Nebraska.

In 1927 Ascheim and Zondek(1) discovered that the urine of pregnant women contained large quantities of the follicular (ovarian) hormone. In the same year they demonstrated the control in part at least, of ovulation by the anterior lobe of the pituitary gland. They demonstrated that this anterior pituitary hormone was also present in large amounts in the urine of pregnant women and elaborated the test now widely known by their names to be used as diagnostic of the presence of pregnancy in a given woman.

Their test consists of six injections of a specimen of morning urine, as follows: 0.2 cc. three times on the first day and the same on the second day in mouse No. 1; 0.25 cc. in the same way for mouse No. 2; 0.3 cc. for mouse No. 3 and for mouse No. 4; and 0.4 cc. for mouse No. 5. Infantile mice three weeks old, weighing about six grams were used. Injections were made subcutaneously, laterally, in the back. One hundred hours after the first injection, these animals together with at least two, sometimes five, control un-injected mice of the same age and weight, preferably litter mates, were killed with illuminating gas and laporatomized. The ovaries were inspected grossly and with a hand lens. They describe the ovaries of the controls as being pale greyish pink and hardly the size of a pinhead. Ovaries of injected animals are two or three times as large, distinctly red, presenting submiliary yellowish protrusions corresponding to corpora lutea, or cyanotic protrusion due to hemorrhage into a follicle or a corpus luteum.

Microscopic finding of even one corpus luteum was considered as indicating a positive test.

They reported a series of 238 specimens from pregnant women in the first eight weeks of pregnancy, in which the test was positive 233 times, or an accuracy of 98.5%. The reaction becomes negative about the 8th day after delivery. The urine of patients with hydatiform mole gives a very strongly positive reaction.

Brouha, Hinglais, and Simonest(2) found that the urine contains the hormone of the anterior lobe of the pituitary after the 15th day of pregnancy and folliculin after the third month.

The time required for reading the test, viz., 100 hours, was an obstacle in its use in diagnosing an ectopic pregnancy in which it is urgent to make a diagnosis before rupture which converts a good surgical risk into a poor one. Knowing that the cat, the ferret, and the rabbit ovulate only after coitus, and hoping that ovulation might occur more quickly in an adult where the ovaries were already mature. Friedman[3] injected the urine in the marginal ear vein of a rabbit and demonstrated ovulation in 24 or at most, in 48 hours. Practical difficulties in obtaining rabbits that have not been stimulated, since even the stimulation produced by one female jumping upon another has been found to produce ovulation, the use of immature rabbits, has been resorted to in an effort to eliminate false positives. Dr. Harold Morgan of our local society, reported in the *Am. J. Ob. and Gyn.*, of June. 1933, his results with the Schneider modification of the Friedman test, which consists of using immature rabbits. His series consisted of nearly 100 cases.

---

*Read before Lancaster County Medical Society, January 2, 1933.

*This work was made possible through the courtesy of the Physiology Department of the University of Nebraska which furnished a colony of adult white rats for breeding purposes and the use of their animal experimentation laboratory for our work. Sincere appreciation is expressed to Dr. Lyman, Prof. Wible, and Prof. Bukey for their advice, assistance, and the use of their equipment; to Dr. Breuer and Miss Mary Bryan for their work with the microscopic slides and to Dr. Arnholt and Dr. Campbell for permission to use the records and specimens from the City Clinics.

Mathieu and McKenzie[4] make use of female rats instead of female mice, because being larger, the organs are easier to inspect in the control animal and especially because mortality rates are markedly less.

Brouha first suggested the use of male mice mature and immature and claimed 100% accuracy. The test depends on the maturation of the accessories through the stimulation of the gonads by the anterior pituitary hormone in the urine. The organs most markedly developed are the seminal vesicles which are distended and filled with their secretion; the prostate and testicles are also somewhat enlarged.

Ascheim and Zondek report as high as a 17% mortality with immature mice. We have had a 10% mortality with the use of rats and all but one of their deaths were due to toxic urines. This was indicated by the fact that repeated tests of the same urine killed other rats. We had this experience with eight specimens and with two specimens each from two patients. The difficulty was solved by extracting the urine with alcohol and ether; the extract thus obtained was no longer toxic. Many specimens may be made nontoxic by simply filtering and acidifying. Inasmuch as the Ascheim-Zondek and all of its above mentioned modifications results in a small percentage of false positive and false negative tests, search for a still more certain test has continued.

Frank and Goldberger[5] with their method of determining the presence of the female sex hormone in 40 cc. of human blood were able to detect it at the tenth week of pregnancy. Thereafter it increased steadily in amount in direct ratio with the growth of the placenta, inasmuch as most of the false positives with the Ascheim-Zondek test, especially those during the menopause, are due to increased amount of Prolan A which is not accompanied by increased female sex hormone, it is quite apparent that the combining of the two tests in the same patient is very valuable. However, this is of no avail until the tenth week.

Mazer and Hoffman[6] have investigated the presence of this hormone in the urine and paradoxical as it may seem, in the absence of a demonstrable amount in the blood, have shown its presence in most cases as early as 1 week after the missed period. It also increases in concentration as the pregnancy advances. Their test is known by their name and employs the method of Allen and Doisey[7] who demonstrated a succession of cell types found in the vaginal lumen of mice and rats during the estrual cycle. Vaginal smears indicate the various phases. As their cyclic phenoma no longer appears after castration, their re-appearance following the injection of urine obtained from pregnant women proves the presence of the hormone. They tested the urine of gravid women and women in all phases of the menstrual cycle, early menopause, lactation, puerperium, and those with pelvic inflammation. Their tables show that normal, nongravid state yields less than 8% of weakly positive, and that the menopause, which is such a sommon cause of false positive with the Ascheim-Zondek test yielded no positives. Acute pelvic inflammation yields a high per cent of positive reactions, rendering the test of little value in differentiating it from ectopic pregnancy. In two cases the test antedated the first missed period by a few days.

The technique of the Mazer-Hoffman test is as follows: Mature but young white female mice are investigated as to responsive genital organs by daily examination of vaginal smear. They are castrated and again investigated, this time to certify completeness of the operation by demonstrating the absence of estrus. Two animals are simultaneously injected with 20 mm. of catherized urine at two-hour intervals, five consecutive times. Daily smears are again made. When evidence of vaginal activity is manifest, smears are made twice or three times a day for 24 hours in order that an estrus may not be overlooked. If only one animal shows a positive reaction the reliability of the test is not impaired as a nonpregnant woman rarely gives a strong positive reaction. The failure of one animal to react strongly may be due to atrophy of the vaginal mucosa incident to a prolonged interval between castration and the test.

Much depends on the correct interpretation of the vaginal spread. Di-estrous, negative, if there is a preponderance of leukocytes, mucus and occasional epithelial cells.

Pro-estrus: Weakly positive, if the vaginal smear contains only a few leukocytes, an excess of nucleated epithelium and some non-nucleated squamous epithelial cells.

Estrus: If the spread contains no leukocytes. no mucus, a preponderance of non-nucleated squamous epithelial cells, and some nucleated epithelial cells.

Strongly positive, if the smear shows only non-nucleated epithelial cells.

It may be assumed that the hormone is not always demonstrable due to the presence of the hormone in insufficient concentration. Mazer and Hoffman, at the time of writing this article, were developing a method of concentrating the urine so that a smaller quantity would contain the hormone.

The Siddal test(8) which is also a biological test for pregnancy and is also done with rats, has not been done by us, as it did not seem as reliable. It depends on the development in size and weight of the sex organs and consists in the removal of them from an injected animal and from a control. The weights of the remainder of the animals are taken. A ratio of one to four hundred or more is considered as sufficient increase of size to indicate maturity and constitute a positive test.

Davis and Ferrill(9) report on the use of immature rats, male and female for the Ascheim-Zondek test. They follow the same procedure as Ascheim and Zondek did with female immature mice, except that they give intraperitoneal injections and use Brouha's observations on the changes in the male infantile mouse. Having followed their technique we will not here describe it.

We think it is an advantage to use rats because they are so much smaller than rabbits and so much cheaper. They are hardier than mice as evidenced by the lower mortality rate. Also one can do several tests with only one set-up for provision of suitable animals; viz., test one male and one female rat with the Ascheim-Zondek procedure, and the Sidall on the same animals sacrificed in the Ascheim-Zondek. A Mazer-Hoffman test can be done on castrated mice; animals, similar to rats in feeding habits and manner of handling. It is extremely rare that a urine which gives a positive Ascheim-Zondek will also give a positive Mazer-Hoffman unless pregnancy be present. Mazer and Hoffman consider any one of the tests as rendering 755 positives in early pregnancies and 90% accurancy by combination of the tests. It still remains, however, to eliminate false negatives.

Recently we have followed a modification recommended by Reiprich(10) in which he uses juvenile rats weighing 40 to 50 grams, injecting 10 to 14 cc. of urine in 6 or 9 hours in two or three doses at intervals of 6 or 6 and 3 hours. The positive reaction is evident in 30 hours. The rat is particularly adaptable to this modification because it resists large amounts of urine. We have given the injection intraperitoneally.

The technique we are using is similar to that used by Davis and Ferrill at the Chicago Lying-in hospital. Immature rats, 20 to 30 days old and weighing 20 to 40 grams, are selected, preferably litter mates. We like to use four animals for each test, a male and female control and a male and female test animal. However, we have not always had a sufficient supply of animals to use this number routinely.

1 cc. of urine is injected intra-peritoneally into each test animal twice a day for six injections. Intraperitoneal injections are simple, and can be given by holding the rat in the palm of the hand and pushing the needle through into the peritoneal cavity. The injection of 1 cc. of urine is often not observed by the rat. The animals are killed with chloroform 96 hours after the first injection, the abdomens opened, and the genitalia inspected. The changes in a female rat noted in a positive test are described by Davis, "the ovaries of the injected rat are grossly enlarged, irregular in outline, and hyperemic. On the surface one can note small hemorrhagic areas, the blood points. Maturity of the entire genital tract is in evidence; however, only the findings in the ovary should be used to decide the pregnancy test." In the male rat the test depends entirely on the development and maturity of the secondaries, especially the seminal vesicles. The ovaries or seminal vesicles are removed and placed in formalin for microscopic examination.

The patient is instructed to bring a clean morning specimen, in order to procure it concentrated. The urines are kept in the refrigerator without preservative. A 2 cc. syringe and hypodermic needles are used for injection.

In the case of toxic urines, we have learned to make an alcohol ether extract after the method of Eberson and Silverberg. Two and a half volumes of 95% alcohol are added to the urine and the urine kept in the icebox for several hours or overnight to allow the precipitate to settle. In order to hasten the procedure, the mixture is sometimes centrifuged and the precipitate washed with ether. The sediment is then suspended in 6 cc. of physiological salt solution and centrifuged to remove supernatant ether. The supernant saline after centrifuging and containing the specific hormone freed from the oestrus or ovarian hormone, is used for injection in rats.

In the time we have been using the test, just short of a year, we have examined sixty-eight urines with results as shown in table I. Of these the diagnosis arrived at by the test was confirmed by subsequent findings in fifty-seven cases. In six cases the true diagnosis could not be determined, because the patient disappeared or the history was unreliable. In two cases the test was not significant because the urines were toxic for rats and we had not then learned to make the extract. One case, McK., does not lend itself to this classification.

The duration of amenorrhea in this series is shown in table 2. We are especially interested in the four positive tests in women whose amenorrhea was 1 month or less. The test is most valuable and most often used in patients whose amenorrhea is less than three months. The positive tests recorded "over three months" are the known pregnancies which were used at first in familiarizing ourselves with the technique.

In table 3 are the diagnoses in those cases in which it was possible to confirm it.

Certain of the cases are of considerable interest and their histories are briefly reviewed:

1. S. T., colored, a 26-year-old para ix, who came to the clinic 10 weeks after her last normal period. The test was positive and a slide from the ovary of the rat used in her test is characteristic. She later delivered on the expected date of confinement.

2. McK. a nullipara, who had a normal menstrual period on Oct. 27, 1932, and missed her periods in November and December. In January she had some bleeding that was fairly profuse, but was told by the physician who attended her that he did not think she had miscarried. In February and on March 17 there was some vaginal bleeding. On April 4 she reported to clinic to find out whether she was pregnant. Examination showed the uterus small and firm. The Ascheim-Zondek was negative. She had no further menstruation and was delivered Dec. 28, 1933. Her date of delivery is therefore 287 days after the date of her last period and 267 days after the Ascheim-Zondek was negative. She was probably one or two weeks pregnant at the time of the test. This is in line with the statements of various authors that the test does not become positive until the fifteenth or twenty-first day after conception.

3. Y, a 26-year-old nullipara, who came to the office with a history of a single coitus twenty-one days previously. The Ascheim-Zondek was a 2 plus positive and when repeated seven days later was strongly positive. We are satisfied that this patient is pregnant but are unable to state the duration because delivery has not yet occurred.

4. N., a married woman whose last regular period was September 16, came to the office of her physician on October 14. A specimen collected that day gave a positive reaction which has been confirmed by subsequent examination in the course of her pre-natal care.

5. F., a 29-year-old, para viii, whose last regular menses was Jan. 29, 1933. She reported for examination March 16 and an attempt to do an Ascheim-Zondek was made. However all the rats died before the completion of the test. She was seen again the first of May when the fundus had enlarged to the size of a three months pregnancy. Again an Ascheim-Zondek test was attempted and after an alcohol ether extract was made, a positive test was obtained. This patient moved out of town, but is known to have lost her baby at six or seven months. We wonder whether the toxic urine and the miscarriage are not more than co-incidence.

6. B., reported for examination October 18; her last period was August 20, two months previous. An Ascheim-Zondek at this time was strongly positive. She returned four weeks later saying that she began to have bloody discharge the day following her previous visit which discharge had continued the entire four weeks. Another urine test was done which was negative. She returned later to report that the bleeding had stopped and pelvic examination at this visit was negative .

7. G. D., a 45-year-old para vi, who came in complaining that she had profuse bleeding at her period. The last "hemorrhage" was some two or three months previous to her visit. She was anxious to have hysterectomy considered because she was near the end of the child-bearing age. Pelvic examination suggested the possibility of pregnancy. The Ascheim-Zondek was positive. She was delivered 6½ months later.

In summary, we feel that in reporting these first 68 cases we can claim a 100% accuracy for the test. The one case in which a negative result was obtained in a patient probably pregnant at the time, is to be explained by the fact that the anterior pituitary hormone does not appear in the urine before the fifteenth or twenty-first day after conception. We had no false positives.*

TABLES

I.

Diagnosis confirmed by subsequent findings	57
Diagnosis could not be confirmed	6
Ascheim-Zondek incomplete	2
McK.	1
Total number of urines examined	68

II.

Duration of amenorrhea	Positive	Test	Negative
1 month or less	4		14
1 to 2 months	9		3
2 to 3 months	8		0
Over 3 months	16	6½ mo.,	1
Never menstruated			1
Unknown			1
Totals	37		20

III.

Diagnosis when confirmed—	
Normal pregnancy	36
Normal non-pregnant	9
Pregnancy with bleeding	1
Abortions	2
Menstrual irreg., non-preg	6
Lactation amenorrhea	1
Pyelitis or cystitis	2

IV.

Rat mortality—	
Total number rats used	204
Number rats died	21
Number specimens killed rats	8
Frank pyuria	2
Death of rat due to intra-peritoneal hemorrhage	1

BIBLIOGRAPHY

1. Ascheim, S., and Zondek, B. Klin. Wochenschrift, 7, p. 8. Jan. 1928.

2. Brouha, Hinglais, and Simonnet, Bull. Acad. de med. 103, p. 150, 1930.

3. Friedman, H. M. Am. J. Phys. 90, p. 617, 1929.

4. Mathieu and McKenzie, Northwest Med. 30, p. 55, 1931.

5. Frank, R. T., and Goldberger, M. A., J. A. M. A. 86, 1686, May 29, 1926.

6. Mazer, Chas., and Hoffman, Jacob. Am. J. Obs. and Gyn. 17, 186. 1929.

7. Allen, E., and Doisey, E. A. J. A. M. A. 81, p. 819. Sept. 8, 1923.

8. Siddall, R. C. J. A. M. A. 91, p. 779. 1928.

9. Davis, M. Edward, and Ferrill, H. Ward. Am. J. Obs. and Gyn. 23, p. 567. 1932.

10. Reiprich, W. Klin. Wchschr. 12, 1441. 1933.

11. Eberson and Silverberg, J. A. M. A. 96, 2176, 1931.

12. Morgan, Harold S. Am. J. Obs. and Gyn. 25, 816, 1933.

RADIUM AND RECTAL CARCINOMA

DANIEL T. QUIGLEY, M. D.,
Omaha, Nebraska.

Cancer of the rectum is one of the most unsatisfactory forms of cancer in regard to treatment and is equally unsatisfactory in regard to diagnosis. Most medical men have entirely false ideas concerning it. Most doctors regard it as a disease of the rectum whereas it is a disease of the rectum alone in less than ten per cent of all cases. It begins and has its existence in the lower margin of the sigmoid where it contacts with, and invades the upper part of the rectum. This is shown by the type of cell. There is an attempt to form glandular structure in the proliferating cells, this showing more clearly in the earlier stages of the disease. Most physicians have the idea that cancer of the rectum has some connection with piles. In my experience I have seen no such connection. Its location is in a different section of the gut. Again the idea is common that any cancer of the rectum that may be diagnosed is a bleeding, painful thing accompanied by constipation. Usually in the early diagnosable stage it is painless, does not bleed, and is accompanied by spells of diarrhea. Constipation of course occurs in the later stage when the tumor mass produces a mechanical obstruction.

ETIOLOGY

In regard to etiology it falls in with other forms of epithelial proliferation in that it grows on a previously diseased area; "previously diseased" meaning an area which harbors a chronic low grade infection. The local insult to the tissues is furnished in a mechanical way by hardened fecal matter containing at times insoluble, rough, cutting, or otherwise "trauma producing" objects such as most persons swallow with food at some time or other. The patient then is one who has gone through a long period of time with a greater or lesser degree of disease of the colon. The acidity of the gut, the hardness of the feces, and the rigidity with which traumatizing materials are held in the hardened fecal mass focus together. The brunt of the insult and injury to the epithelium is received in the natural narrowing of the gut at the upper margin of the rectum. Acid reaction. repeated injury, and low grade infection present the triad which furnishes the ideal setting for carcinoma. In our cases every patient had a previous history of diseased colon. On the other hand of course every colitis patient does not develop cancer; and some grow it at other areas in the colon; but given a patient with the predisposition to grow cancer, (and at present we do not know what this predisposition is), and the irritating local factors described and the epithelial proliferation which we call cancer is a possible result.

TYPES

Cancer of the recto-sigmoid junction is the disease commonly called "rectal cancer" and is always of the glandular type, adenocarcinoma. Cancer developing lower down on the wall of the rectum or in the anus is of the squamous cell type.

The adenocarcinomata usually encircle the gut very early. The mass drags down into the rectal cavity. It may be felt with a finger carried as high as possible in the lumen of the gut. It has the peculiar, soft spongy. ragged, irregular feel of a soft mass underlaid by harder tissues, the soft parts feeling softer than normal and the hard, deeper parts feeling harder than normal tissue. The lumen is smaller than normal and more or less rigid. There is blood on the examining finger when it is removed. The finger feels only the lower edge of the growth, the main part of it is above; in the lowermost segment of the sigmoid, and the upper part of the rectum.

Metastasis occurs relatively earlier in the glandular types of rectal cancer than in the squamous cell types but in both types the growth is present and has attained some considerable bulk and is bleeding before nests of cancer cells may be demonstrated in the nearest lymph glands. Enlargement of the neighboring glands showing a round cell infiltration but no cancer nests may be present quite early in the disease. In the past these swollen glands have been considered cancerous from their gross appearance and this has given rise to false statistics on the subject. Cures of cases involving removal of the cancer area with cancerous glands have been reported but it is my conviction after twenty years' study of the subject that no case showing multiple glands involved by microscopically demonstrable cancer nests is ever cured.

There is something about the trauma connected with the operation for rectal cancer which aids and assists in pumping the cancer emboli through the lymph vessels in the neighborhood and smears cancer cells through the operation wound and forces bits of cancer material into lower segments of the gut if lower portions of the gut or anus are left. This all makes recurrence or regrowth more certain.

SURGICAL OPERATION

Operation as it is usually done on the advanced cases leaving the patient with a colostomy may prolong life but certainly leaves the patient in a most miserable condition for the short time that intervenes between the surgical work and the inevitable recurrence. The Kraske or its various modifications does more damage to the patient and presents a more dismal outlook as regards cure. It would seem that the unfortunate person with cancer of the rectum must not only bear the ills that come with the disease but also must often bear the traumatizing attacks of ill advised and hopeless surgical operations. All of this applies to ill advised and badly executed operations on rectal cancer which has ceased to be local and has ceased to be superficial. Local, superficial rectal cancer should be and is just as curable by surgical removal as any other form of cancer.

Cures of cancer of the "upper rectum lower sigmoid" junction are seldom achieved, the reasons being that: (1) The patient comes to the doctor too late, (2) The doctor does not examine the rectum or if he does he examines only the lower part of the organ, (3) The doctor feels the mass but does not recognize it as cancer, he advises a watching and waiting policy, (4) Operation is advised and done on advanced cases in whom the trauma incident to the operation plants the disease deeper, (5) Even in early cases the chance for cure may be lost by rough examinations with proctoscopes or sigmoidoscopes, the metal instruments cutting and injuring the growth and forcing cancer emboli to a distance in the surrounding lymph channels. Bungling and unskillful biopsy attacks may accomplish the same result.

Rectal cancer to be curable by surgery must be early and must be local. Unfortunately this ideal is seldom realized in actual practice. We must deal with our patients as we find them. Surgery on rectal cancer as it comes to the clinic or the office is usually unsuccessful because the case is usually too far advanced. Surgery in such cases adds to the patient's troubles instead of easing them.

TREATMENT BY RADIUM

Radium is a remedy which may be used in any stage of the disease and is capable of giving some degree of relief at any stage. It has been proved by over twenty years' experience that the relation between radium and cancer in general is very much like the relation between water and fire. If one has a relatively small fire and a relatively large amount of water and if one uses the water properly there is no question that the water will kill out the fire; however, if the supply of water be inadequate or if adequate, it is improperly used, then failure will result. There is no question about the capacity of radium to kill out localized cancer. In even the earliest cases then one must be sure he is working with adequate quantities of radium and that he is making the application with a sufficient degree of skill to insure the best results. In actual practice these factors have not been given sufficient attention with the result that a fair evaluation of radium as a therapeutic agent in cancer of the rectum is not possible at the present time.

Our own work in this field began in 1914 and during the 15 years following that date seventy-five cases were treated with radium alone exclusive of operative procedures of any kind. During the early years of this period the question of keeping the radium in apposition with the diseased area was one of our problems. Various schemes and inventions were used only to be discarded as inadequate. We finally decided on a rather simple arrangement: radium tubes fixed on the end of a rather stiff wire covered with gum rubber. The tubes were screened with a proper amount of gold and brass and the bulk of the instrument kept small enough to admit it freely into the lumen of the gut where it runs through the neoplastic mass. After it is fitted into the mass the wire projecting from the anus is bent acutely over the sacrum and fixed thereon with adhesive plaster. Certain loops are necessary on the same plane as the skin to get good fixation and good contact. It may increase the patient's comfort to fix a pad of gauze where the wire bends around the anal margin. In such a treatment a patient may wear the radium instrument containing 90 to 100 milligram of radium without any change for from 16 to 24 hours. the time being determined by the size of the neoplastic mass. A dose of morphine may be necessary to keep the bowels from moving. With this technique the radium fits inside the diseased area in just the same manner as the radium fits in place in treatment of the cervix—it is entirely surrounded by the cancer mass, so there is little or no loss of radiation into the healthy tissues. I believe this technique to be better than the implanting of seeds or needles as in these latter methods it is not possible to properly space the different radium units and the action depends largely on soft rays which are particularly painful and destructive if normal tissues are accidentally hit. With my technique there is a relatively homogeneous radiation with hard rays which have a much less deadly effect on normal tissues. The disadvantages connected with my method are that a very much larger quantity of radium is used and the lumen of the gut is more or less plugged during the time that the applicator is in place. Only a few patients complain of the lack of ability to pass gas and those who do are quickly relieved with a hypodermic or morphine.

In the 75 cases treated 7 lived over five years and four over ten years. Many of the patients treated were suffering from other diseases which eventually caused their death. About 6% were diabetic. Many were referred for treatment with radium because heart disease or some other chronic disease made them unsuitable cases for surgical operation and the other diseases were the cause of death. The fact that so few are alive 15 years after treatment does not reflect on the success of the treatment, it simply brings clearly to mind the usually overlooked fact that a patient with cancer may have other serious diseases and may even pick up other diseases and die from them at some time after his treatment. The average patient with cancer is middle aged or old and has had many bumps and bruises and chronic infections and food deficiencies to upset his organism or its individual parts before he develops the exaggerated healing response which we call cancer.

What percentage of cancers of the rectum are curable by the application of radium? I do not know but as the treatment may be applied without trauma and without implantation of cancer cells into normal structures I believe the results are as good as may be obtained by surgical operation. There is a peculiar sensitivity to radium radiation in some of these cases, some seemingly advanced cases clearing up in a most surprising manner and staying well for a period of years. In every case no matter how advanced, bleeding and pain are quickly brought under control and absorption of toxic material is checked as the patients are soon experiencing a feeling of well-being with improved strength, appetite and ability to do their work. Unfortunately radium does not work well in recurrences following operation as the disease quickly spreads through the scar and it gets beyond the limits of localization so necessary for successful radium treatment.

UTERINE CANCER AND PREGNANCY—REPORT OF TWO CASES

EARL C. SAGE, M. D., Secretary of Staff,
From the Department of Obstetrics and Gynecology—University of Nebraska Callege of Medicine,
Omaha, Nebraska.

How frequently is cancer of the uterus associated with pregnancy? It is an infrequent condition.

1. In a study of upwards of 10,000 post mortem records of the Philadelphia General Hospital, McGlinn failed to find a single case.
2. B. C. Hirst estimated the incidence to be one in 12,484 pregnancies.
3. E. O. Gross one in 1,538.
4. Mussey one in 417.

Individual experience varies just as widely. Sir Herbert Spencer has reported 10 cases, Hauch. 4

cases, Gross 34 cases, Bainbridge, 2 cases and McGlinn, 2 cases. Many gynecologists and obstetricians of wide experience have not encountered a single case.

Cancer of the body of the uterus, associated with pregnancy, must be an extremely rare condition. Schumann's case reported in 1927„ is one of the few to be found in the literature.

There is no reason why a woman with early cancer of the cervix, should not become pregnant; nor is there any known reason why a pregnant woman should not develop cancer.

The association of cancer and pregnancy occurs more frequently in multipara than in primipara, and in the third decade, rather than in the second. These findings are dependent on the repeated traumatisms to the cervix in multipara and the age incidence of cancer in general. Chilling found the average number of pregnancies in the reported cases to be 6.9.

What is the most important symptom of cancer associated with pregnancy?

In the final analysis, vaginal bleeding is the one out-standing symptom, and a careful and thorough examination for the cause of all bleedings in pregnancy will disclose the cause. We made our biggest mistake in case number one, to be reported, in not investigating thoroughly enough the cause of this patient's vaginal bleeding a month preceding her expected date of confinement. We had her under observation for 3 days—performed a vaginal examination, did not use one speculum, as we concluded that the cervix was only badly lacerated and the bleeding might be due to a low implantation of the placenta.

Patient No. 1 actually delivered 16 days after the time we had the opportunity to make a correct diagnosis. We were not obsessed with the fear of making a vaginal examination but all we learned was that the patient had a badly lacerated cervix. We should have used a sterile vaginal speculum and looked at the cervix as well, for unless the patient is examined vaginally, the cancer will never be discovered. We simply took for granted that the bleeding was due to partial separation of a low lying placenta.

The patient was examined by the interne on her 7th day post partum—a bilateral laceration was felt and this was repaired by the interne on the following day. Here again we should have made a correct diagnosis but nothing was suspicioned and the patient was dismissed from the hospital and told to return to the post natal clinic.

Just two months after the birth of her child she was re-examined on Oct. 2, 1933, and at this time a small cauliflower growth was felt and seen on the anterior lip of the cervix and a malignancy was suspected.

Due to our inability to get the patient back into the hospital a positive diagnosis was not made until Oct. 30, 1933, when it was learned that the patient had a carcinoma of the cervix.

In other words I feel that we were 114 days late in making a proper diagnosis. If we had learned in July 18, 21, 1933, that the patient had this carcinoma, we would not have permitted this cervix, the seat of cancer, ever to be traumatized by a subsequent labor. Authorities are in accord that abortion, or the termination of the pregnancy at any stage by the vaginal route, has no place in the treatment of this complication, as delivery by the vaginal route opens up channels for metastasis, stimulates rapidity of the growth by traumatization and subjects the woman to added risk of infection.

The following is this first case report in detail:

F. M., No. 44385, July 18, 1933, to July 21, 1933, aged 33, gr. VI, para 111, came into the hospital complaining of vaginal bleeding, and dizziness.

The second and third pregnancies were miscarriages at 5 and 8 months respectively.

The admission diagnosis was pregnancy; placenta previa. Vaginal examination showed a badly lacerated cervix—no speculum examination was made. According to her menstrual history she was due Aug. 16, 1933, she stayed in the hospital three days and was told to report back to the dispensary.

Patient re-entered hospital Aug. 2, 1933, and rectal examination showed 1½ finger dilatation—with uterine contractions about every six minutes. She delivered a baby boy 8:55 a. m., Aug. 2, 1933, uneventful puerperium.

The interne repaired her cervix on the eighth post partum day, there being a bilateral laceration. She was dismissed from the hospital Aug. 12, 1933.

On Oct. 2, 1933, she returned to the dispensary for her post natal examination. She had moderate amount of bleeding since her delivery and a foul smelling discharge for past two weeks and it was found that her cervix was longer than normal, Schiller's test was performed, the cervix was suspected of being malignant and she re-entered the University Hospital Oct. 28, 1933, on the gynecological service No. 45426.

On Oct. 30, 1933, a biopsy was taken from the anterior lip of the cervix where there was a cauliflower like mass the size of a half dollar. Microscopical examination showed an extremely rapid growing epithelioma. S-33-970-988. A diagnosis of carcinoma of the cervix was made.

Nov. 6, 1933. Radium was placed in the cervix and on each side of the cervix as follows: total radium in cervix 3080 mgm hours.

Total colpostat 4200 mgm hours. 10 mgm. on each side of the cervix and 5 mgm. at the external os: 20 mgm. in uterine cavity.

The radium was followed by x-ray therapy, as follows: 600 r units each over three anterior ports and 260 r units each over three posterior ports, over a period of ten days.

The prognosis for the mother, no matter what stage of the pregnancy may be, is bad, but not altogether hopeless. A number of reports of cures after hysterectomy, radium and cautery and amputation of the cervix are found in the literature.

If the cancer of the cervix is discovered subsequent to viability of the foetus, there is general agreement that the pregnancy should be terminated by caesarian section, with immediate complete hysterectomy or subsequent treatment with radium and roentgen ray, the choice of immediate hysterectomy or subsequent radiation, depending on the stage and character of the cancer.

In Case No. 1, it is the writer's opinion that if the early carcinoma had been discovered in the patient's ninth month of gestation; better end results could have been expected if a caesarian section had been performed with adequate radium and roentgen ray therapy instituted immediately after delivery.

The second case report is as follows:

M. D., No. 45423, October 27, 1933 to November 14, 1933, age 43, para VIII, came to the University Hospital from Bellevue, Nebr., because she was making no progress in labor. With her former pregnancies she had easy labors; with the exception of the last one. Vaginal examination showed about two fingers dilatation but cervix was very hard, unyielding, and this induration extended into the right parametrium.

October 28, 1933. A Bandl's ring was present and there was no more cervical dilatation. Nine grains of sodium amytal was given per rectum and 1000 cc. of 10% glucose was given intravenously at 12:00 o'clock noon, the same dose of sodium amytal was repeated in three hours; and the same amount of glucose was given five hours later.

8 p. m. the patient was taken to the delivery room. A Voorhees bag was introduced to aid in cervical dilatation. The fetal heart tones were not heard. The bag remained in the uterus all night but there was very little increased dilatation of the cervix.

October 29, 1933. At 8 a. m. the cervix was forcefully dilatated, the foetus being dead, a craniotomy was performed and the foetus delivered.

Nov. 6, 1933, on the eighth post partum day a cervical biopsy and repair was done. The cervix was badly lacerated, the posterior lip retracted and fixed.

Pathological report S-33-994. One section shows infiltration of connective tissue by masses of epithelial cells growing without any definite order. Diag.: 783-881, carcinoma of the cervix.

Nov. 13, 1933, the radiological and gynecological department saw the patient and the carcinoma was graded as stage 111 with vaginal implants and infiltration of the right parametrium. Prognosis given as poor.

Radium was not available so patient had to return 10 days later, so she re-entered the hospital Nov. 28, 1933, 7000 mgm. hours were given as follows:

3000 mg. hr. in the cavity of the uterus.

2000 mg. hr. to the right side of the cervix.

1000 mg. hr. to the left side of the cervix.

1000 mg. hr. in the cervix itself.

X-ray therapy was then given ten days later; 4 x 1000 r units—¼ mm. cu., 1 mm. A. at 50 cm. over a period of ten days.

In this second case, the cancer of the cervix was not diagnosed until the eighth post partum day. Here again, if the true condition had been known at the time of delivery, a caesarian section would have been the better way to deliver this patient. Due to the involvement of the right parametrium, a complete hysterectomy would probably have been of no great help, and here again the use of radiation therapy could probably accomplish more for the patient than any other method of treatment.

Here in a teaching hospital we have found two cases of uterine cancer complicating pregnancy, which is an infrequent condition. Our staff is certainly cancer conscious, yet these cases were discovered in each instance too late to properly treat the individuals as we know they should have been delivered to prevent further traumatization of the cervix and dissemination of the cancer cells.

No hard and fast rules of procedure can be laid down for the treatment of all cases. Each case must be judged individually and we must avail ourselves of all the knowledge at our command.

Authorities are in accord, that the termination of pregnancy at any stage by the vaginal route, has no place in the treatment of this complication.

THE SYSTOLIC MURMUR: ITS CLINICAL SIGNIFICANCE

Samuel A. Levine, Boston (*Journal A. M. A.*, Aug. 5, 1933), states that systolic murmurs do occur but are not common in normal persons. The louder ones are always associated with some form of cardiovascular disease. All systolic murmurs deserve consideration. Many such murmurs, although frequently regarded as "benign" because the persons feel well and have no symptoms of cardiac insufficiency, are due to organic changes or indicate potentialities for the present development of stenosis of the mitral or aortic valves, hypertension and subacute bacterial endocarditis. Others are truly benign in the sense that no deleterious effects result, even after an indefinite period.

EXTRA-MURAL PSYCHIATRY*

MYRON M. CAMPBELL, M. D.,
Ingleside, Nebr.

The most obtrusive obstacle which is placed in the way of effective psychiatry is the public's archaic tendency to stigmatize anything and everything associated with disease of the mind. Insanity is yet considered a dread disease of the same category as syphilis or leprosy. A state mental hospital to the unaware remains a lunatic asylum—a place to be fearfully shunned and shudderingly designated to morbid sightseers.

Unfortunately, there is justification for this common attitude. Our misguided forefathers by inhumane and even torturous methods of treatment of insane persons, instilled into the public mind a horror and dread of asylums which modern concepts of psychiatry have failed to entirely eradicate.

Psychiatry, as a branch of the art of medicine, has been woefully slow of progress. Primitive man probably handled the problem of lunacy very directly and simply killed those who became demented as we would now kill a mad dog. Afflictions of the mind later came to be considered superstitiously as spells cast by evil spirits or possession by demons; then mystic rites of tribal medicine men were invoked and the mad one was exorcised. Later yet the insane were treated as actual demons and as such were shunned or beaten, and frequently even burned at the stake. In medieval times hospices and asylums for insane persons began to be established by Christian monks. These eventually degenerated through state tampering into horrifying places where patients were chained hand and foot, made to sleep on vermin infested straw, fed revolting food, whipped unmercifully, allowed to go unclothed, and eventually permitted to escape by death, without benefit of any sort of logical medication. The Hospice of St. Bethlehem in London, called Bedlam, was once a typical example.

At the end of the Eighteenth Century, Pinel, a French physician, was given the privilege of releasing the shackles of psychiatry. He removed patients' chains, cleansed their quarters, allowed them fresh air, good food, exercise and medical attention. His reforms were not universally adopted, and even a century after his death abusive methods were still existent in mental institutions. Others were carrying on, however, and with the new century—through the efforts of such men as Conolly, Tukes, Kraepelin, Charcot, Freud, Bleuler, Meyer, Campbell, and White, a new scientific concept of psychiatry was established.

The honor of bringing about the application of improved psychiatric methods practically, belongs to Clifford W. Beers—a man who is eulogized as "he (who) has well nigh organized the world for the humane treatment of the insane." This man, within a few years after his graduation from Yale university, suffered a mental break-up which kept him under institutional surveillance for three more years. Following a remarkable recovery from a severe psychosis, he wrote a book detailing his experiences while a patient and called it, "A Mind That Found Itself." He followed Disraeli's dictum: "Think ever that you were born to perform great duties." Beers set out with impassioned fervor to create an organization dedicated to the principle of prevention of "nervous and mental diseases through lay cooperation with the neuro-psychiatric profession in the community." The miracle is that Beers succeeded, and during the nearly thirty years since the inception of his idea there has grown through his efforts and those of his associates a great movement, the force of which is applied to the conservation of mental health, with official organizations in over half our states and in twenty-five foreign countries. Clifford Beers' monumental work is truly the fulfillment of "great duty." It is for others to continue and perfect the performance of this duty to mankind.

The entire Mental Hygiene movement which was initiated by Mr. Beers' book, has a similar relationship to psychotherapeutics that public health activities have to medical therapeutics. "It is an organized community response to a recognized community need."

The definition of what constitutes mental health is given in publications of the National Committee for Mental Hygiene as follows: "Mental health is the adjustment of human beings to themselves and the world at large with a maximum of personal and social effectiveness. This means a degree of well-being that permits the individual to make the most of his capabilities, with a maximum of satisfaction to himself and the social order and a minimum of friction and tension. It implies also socially acceptable behavior and the ability to maintain oneself intellectually and emotionally in any environment."

---

*Read before the Adams County Medical Society, Hastings, Nebr., February 7, 1934.

To achieve this object there must first be evolved a consciousness within the community and state that mere institutionalization of the insane and feeble-minded is an evasion of responsibility. The roots of mental diseases grow like rampant weeds, stealing the energizing force of peaceful communal life. They must be torn out and the seeds destroyed. Institutional officers cannot do more than assist as gardeners — they must work in cooperation with other social, educational, religious, charitable and service agencies.

Broadly, under the general heading Conservation of Individual and Communal Mental Health, the objectives are these:

1. Detection early of social maladjustments, deficiency, delinquency, pre-psychotic and neurotic reactions;
2. Supervision intelligently of those exhibiting such conditions;
3. Investigation of the cause, nature and consequences of such aberrations both within the individual and communal sphere;
4. Interpretation of such knowledge and its dissemination through
5. Education of both lay and professional public;
6. Recognition early of actually psychotic cases and hospitalization when necessary;
7. Reconstruction of mental integrity, or alleviation (at least) of perverse mental conditions by improved institutional and social service methods;
8. Restoration of the afflicted to a useful, constructive social and economic life outside the institution;
9. Destruction of various existing socially disintegrating conditions; and finally
10. Solution of financial problems attendant upon these projects.

The mere consideration of such a program appears grandiose and the establishment of it is in fact a tremendous task, but the need is too obvious and too demanding to be evaded. The mental health of communities is dependant upon the happiness and security of its members, and in turn the security of the state and the nation depends not so much upon abstruse economic and political movements. as upon the adjustment of the integral parts of the commonwealth to whatever adverse situations become thereby social concomitants. Our national psychology is such that we prefer modifications of the social order by evolution rather than revolution. Evolution demands minute mutations gradually acquired. These small beginnings are purely local phenomena and should result from an appreciated need for more acceptable modes of social adaptation.

Such changes in our community life must always be spontaneous. More frequently than not they are blundering and haphazard, because there is no very efficient cooperation between organizations within the community which are practically, if not nominally, dedicated to similar objectives. There may even be a disinclination toward cooperation. Antagonisms result particularly when local political factions and greeds are allowed to exercise their destructive and pernicious influences. The very essence of all social welfare work, and particularly individual and communal health work is an unselfish Christian devotion to an ideal objective. Any deviation from this ideal is in itself unhygienic.

In order to clarify and emphasize what is socially unhygienic it is necessary to leave generalities and refer specifically to what are considered to be the causes of mental disorders. The origin of neurotic and psychotic disorders, according to modern opinion, is not dependent upon hereditary influences, but largely upon dynamic environmental factors. The reaction pattern of a personality is determined by the attrition of environmental situations upon individual attributes. The shaping of the molds of life begins before the potters are conscious of design, and continues throughout the flux of earthly existence. The beauty of the product, or its rupture, depends upon the several artisans of time.

The distinction often made between abnormal child and adult reaction patterns is purely arbitrary, but is valuable in emphasizing that the source of mental disorders may be found usually in early defects of habit formation, or personal discipline. Abnormal behavior traits of either children or adults must not be considered as sins, but as symptoms of faulty environmental influences. The child mind is extremely plastic and impressionable, and we must recognize that timidity or disobedience (for example) are not inherent traits, but aberrations engrafted upon a virgin plant. A child's parents, his brothers and sisters, his playmates and his teachers are all responsible for that child's behavior—be it good or bad. The same influences and more mature contacts and situations of adulthood, determine whether a person will become a useful citizen, or a public charge because of anti-social behavior or mental aberration.

The situations which influence behavior and mental integrity may be conveniently divided into those of the home and those of the community. The most prominent common problems in the home are such as the following:

1. Incompatability of parents, or
2. Conflicts of parental authority.
3. Domineering attitude of one parent or other family member.

4. Favoring of one child with neglect of another.
5. Pampering, over-solicitude, and lack of discipline.
6. Harsh punishment, cruelty, and lack of affection.
7. Interference by relatives.
8. Religious conflicts.
9. Physical disability,
10. Mental disorder,
11. Delinquency or immorality of one family member.
12. Disruption of the home because of divorce, death, imprisonment or hospitalization of one of family group.
13. Inadequate financial circumstances.

In the community the problems are of a parallel nature but of broader scope and include:

1. Racial prejudices and hatreds.
2. Confusion of laws and corrupt law enforcement.
3. Social and economic discriminations.
4. Inequalities of opportunity.
5. Misplaced sentiment in regard to delinquency and crime.
6. Public disinterest in social and health problems.
7. Onorous supervision of the home by outside influences.
8. Religious prejudice and bigotry.
9. Congestion of population and inadequate social outlets.
10. Political corruption and discriminatory laws.
11. Prevalence of unwholesome moral conventions.
12. Lack of intelligent laws dealing with crime and insanity.
13. Unequal distribution of wealth and maladjustments in industry.

It is not to be understood that all the woes of tortured minds are dependent upon these interlocking factors. It is granted that a certain percentage of disorders of the mind are caused by toxic and organic conditions, and some are due to original mental deficiency or trauma.

There are in general two types of reaction to deleterious home and community influences. An individual either actively protests (the aggressive reaction) or passively submits (the recessive reaction). Toward frustrations, disappointments, antagonisms and improper habit training in the home, a child may exhibit in one case temper tantrums, destructive habits, petty thievery, disobedience or dishonesty; or in another case he will be excessively dependent, lacking in confidence, timid, given to vague fears, or to running away from home. If these traits continue to maturity and are translated into adult terms they become in the first instance, such responses as excessive irritability, violence, delinquency and criminalism; or in the other instance those of irresponsibility, inadequacy, insecurity, social maladjustment, anxiety, nomadism, and occasionally dipsomania or drug addiction.

The ideal to be sought in mental hygiene training is a precise balance between sublimation of such instinctive libido manifestations to the commonweal, and the integration of the personality to obtain individual independence, security and contentment.

The general attitude of the state governments in the past has been to assume the custodial care of those persons in whom this balance has been disturbed or destroyed. The care of these unfortunates has been heretofore largely managed by collective segregation, in the mistaken idea that the expense might be minimal. In view of the growing financial burden of such care. the state must come to realize that measures must be devised and adopted to prevent or forestall mental illnesses and thus to save the consequent economic loss involved.

The problem resolves itself plainly into one of state economy. The objectives in its solution are these: First: the maintenance of active and productive citizens in their respective social and economic roles. Second: the correction of innate defects of communal life peculiar to each community. Third: the early detection of neurotic and psychotic aberrations. Fourth: extension of the state's guardianship until such time as the patient may demonstrate his restored ability to adjust to his environment satisfactorily. These are obviously most pertinent needs, since the state assumes at present no jurisdiction over mentally ill persons, until often it is too late and then at a much greater financial expenditure than would otherwise be necessary.

Extra-mural psychiatry includes, therefore, whatever psychiatric service the state hospital may be prepared to provide for the benefit of the community and state outside routine hospital activities. It is not intended to be merely a general educational and propogandist program, but rather a practical application of psychiatry directed to the preservation of mental health and the alleviation of mental illness in the community. Such an idealistic program is not the responsibility of the state hospital alone, but of all community social agencies cooperating as a whole, and it particularly requires the support of professional groups. The initiation of such a project lies with the community; only the advisory and supervisory obligation lies with the state hospital and only then insofar as the state may provide psychiatrists, psychologists and social workers for the actual conduct of extra-mural psychiatric activities.

REFERENCES

1. Cross, Wilbur T.: The Place in Literature of "A Mind That Found Itself"—The Book That Started a Movement. Mental Hygiene. Vol. 17, No. 4, Oct. 1933, p. 530.

2. Winslow, C. E. A.: The Mental Hygiene Movement and Its Founder, Mental Hygiene, Vol. 17, No. 4, October 1933, p. 533.

3. Strecker and Ebaugh: Clinical Psychiatry, Chap. 14, Third Edition. F. Blakiston's Son & Co., Inc.

4. Stevenson, Geo. S.: A Suggested Community Mental Hygiene Program, Amer. Jour. of Public Health, Vol. 21, No. 12, December 1931.

5. Meyer, Adolf: Individualism and the Organization of Neuropsychiatric Work in the Community, Mental Hygiené, Vol. 9. No. 4, Oct., 1925, pp. 673-685.

6. Copp, Owen: Community Organization for Mental Hygiene, No. 115, Reprints of Reports and Addresses of the National Conference of Social Work, 1917 meeting at Pittsburg.

7. Singer, H. Douglas: The Possibilities of a State Society for Mental Hygiene, Mental Hygiene, Vol. 5, No. 2, April, 1921, pp. 342-352.

8. Stevenson, Geo. S.: Role of Community Clinics in Mental Hygiene, J. A. M. A., Vol. 96, March 28, 1931, pp. 997-999.

9. Beers, Clifford W.: A Mind That Found Itself, Doubleday, Doran & Co., Inc., 5th Edition, 1932.

THE MANAGEMENT OF PROSTATIC OBSTRUCTION*

C. A. OWENS, M. D.,
Omaha, Nebraska

Much of the recent literature on the surgical care of prostatic obstruction gives the impression that clear-cut and universally accepted methods have not been formulated for handling the old men with prostatic pathology. It is even suggested that the whole subject of the management of prostatism is to be revised and that the painstaking and sometimes tedious methods developed so carefully and with such gratifying clinical results during the past decade are to become obsolete. A careful analysis of this recent literature will show that much of the controversy is among urologists and that it centers around the question of how generally the new transurethral resection methods can replace the older surgical enucleation known as prostatectomy. In the heat of technical debate the basic principles of case management and accurate diagnosis are hardly mentioned. The problems of accurate diagnosis and proper care of the patient before he is ready for surgery of any kind is still one that concerns the family doctor, the general surgeon and the urologist alike, and the essential details of such management have not changed in the least. At a time when enthusiasm is rampant and too much emphasis may be placed on a technical advance which is an end procedure after all, it is well to pause long enough to review and emphasize the established principles that play so important a part in giving the patient what doctors are supposed to give—relief of suffering and longer life. It is hoped and expected that recent so-called advances in transurethral surgery may somewhat shorten the time necessary for care of these elderly men, that it may cause more of them to present themselves for proper care, and that the morbidity and the mortality may be reduced simultaneously with an improvement in average results. If all this is to come about it will be by adding an improved operation as the proper culmination of management that started out with correct diagnosis, proceeded with intelligent and sufficient preoperative care and closed with the type of surgery most suitable for the given case.

SYMPTOMS

The patient is generally well past fifty and comes complaining of difficulty with his voiding, especially during the night. Typically there is frequency, hesitancy, straining, small stream, dribbling, and so much disturbance of rest that the general health is much impaired. Often the whole symptom complex is aggravated by cold weather. Delay in answering the call to void results in greater necessity for straining to get the stream started when opportunity does present itself and it is not uncommon for complete retention to be brought on simply by having waited too long. Blood may appear in the urine at times and occasionally its presence is the chief complaint. Attacks of complete retention may alternate with intervals of complete comfort in atypical cases.

DIAGNOSIS

The differential diagnosis is relatively simple in that the list of conditions other than benign hypertrophy which might give similar symptoms is not a long one and consists simply of:

1. Urethral stricture.
2. Carcinoma of the prostate.
3. Spinal lues.
4. Bladder pathology.
5. Contracture of the vesical orifice.
6. Inflammatory disease of the prostate.

Stricture is by no means uncommon in men of declining years, and when it is the result of a previous urethritis it is most liable to become troublesome ten years or more after the acute urethritis has disappeared. In the examination the patient is asked to void all he can and then a soft rubber catheter is immediately passed, taking care to be as aseptic as possible in the technique. If the catheter goes in readily there is no stricture of any consequence. At the same time valuable information is obtained regarding the presence of residual urine.

---

*Read before the Madison Six-County Medical Society, Madison, November 21, 1933.

Carcinoma: In the experience of the larger urological clinics fully twenty per cent of men having prostatic obstructive pathology are found to have malignant changes in the gland. Such a great incidence of so serious a complication should make a profound impression on every one who does a rectal examination. Never fail to have the possibility of cancer in mind and to note whether the consistency of the prostate is suggestive of stony hardness and whether the gland is movable or fixed. In early cases, or in those in which a large adenoma has small areas of malignant degeneration, the diagnosis may be difficult if not entirely impossible. It used to be stated that carcinoma in its early stages occurred only in the prostatic capsule directly under the examining finger, but more recent studies of serial sections of large apparently benign adenomata have shown that malignant changes can occur in isolated spots at any location within the prostate. A case strongly suspected of being carcinomatous should have x-rays of the pelvis and femur, because bony metastases discovered in this manner will often furnish the proof of malignancy. As a rule the diagnosis is not greatly in doubt.

Tabes dorsalis or spinal lues may first manifest its presence by an interference with satisfactory bladder function. Rarely actual prostatic enlargement and tabes are present in the same individual, and when this is so the physician will do well to know about the tabetic manifestations, because after surgical attention has been given to the prostatic adenoma the patient may still be unable to void or may have total incontinence and should be so advised before he submits to operation. The diagnosis is made by finding a wide open internal sphincter at cystoscopy, by noting the typically altered reflexes, and by a positive serology of the spinal fluid.

Bladder pathology includes several conditions capable of producing quite similar symptoms, but again quite easily recognized. The possibility of stone in the bladder should always be remembered. It may be felt and heard when a metal sound is passed and it may be visualized by x-ray. Although bladder calculi may occur where no obstruction of the lower urinary tract is demonstrable, it is certainly the rule to find some sort of vesical neck pathology whenever a calculus is present. Hence the discovery of a calculus should not cause the clinician to stop his investigation. The cause of the calculus should be the next problem for solution and some form of vesical neck dysfunction will usually be demonstrated. The occurrence of calculus as a complication of prostatic hypertrophy is fairly frequent.

New growths in or near the vesical orifice may act as mechanical obstructions to the flow of urine through the orifice. They are to be discovered by cystoscopy or, in some cases, by means of a cystogram made by filling the bladder with air or with a suitable opaque medium and noting a filling defect.

Diverticula are accessory pouches formed by outpocketings or herniations of the bladder mucosa through defects in the muscular coat. The pathological physiology of these pouches, when they are of considerable size, is interesting, and their presence is often suggested by the story told by an intelligent patient. He says the stream starts easily, flows freely and terminates promptly without dribbling and with a feeling that the bladder is completely empty. But within a few minutes, or at most a very short time, the desire to void again occurs and he is again able to pass a considerable amount of urine. After this he may be relieved for a considerable length of time. The muscular cavity of the bladder proper empties itself as it should, but as it relaxes again urine from the passive accessory pouch finds its way into the bladder and gives the signal that voiding is again necessary. Such a patient may be, and generally is in little need of help until infection finds entrance to his bladder. Then his frequent desire to void becomes a painful nuisance, for as soon as one voiding is finished irritating urine again runs in on a sensitive trigone to cause repetition of the act. Prostatic obstruction may not be present at all and the true diagnosis again must be made either by cystogram or by cystoscopy.

Contracted vesical orifice or median bar is a condition in which a fibrous thickening of the posterior lip of the vesical orifice interferes with free opening of the internal sphincter. The normal configuration of the vesical orifice is noticeably changed as seen through the endoscope although there is no intravesical lobular hypertrophy. An important point to note is the presence of bladder trabeculation, for this will be prominent if the obstruction is of any consequence. There is no palpable enlargement of the prostate per-rectum in these cases and they are further atypical in that they may occur earlier in life than a true adenomatous hypertrophy.

Inflammatory disease of the prostate occurring in an individual of prostatic age may result in confusion because of the similarity of its symptoms to those of prostatic hypertrophy. A small fibrous prostate causing obstruction and one which is the seat of chronic inflammatory disease may be indistinguishable per rectum. Prostatitis is often present along with hypertrophy in which case it is only of secondary importance, but should the urinary difficulty arise from prostatitis alone the recognition of the prostatitis as the center of the picture is of paramount importance.

Benign prostatic hypertrophy with none of the above complications presents variations of the following positive findings. The bladder is more or less distended to the point of being visible or palpable in the lower abdomen and occasionally reaching up to the umbilicus like a pregnant uterus. There is a residual urine varying from complete retention to almost none. Rectal examination shows an anal sphincter of good tone and an enlarged prostate of smooth surface and even consistency. The knee-jerks and pupils react normally. In case of enlargement affecting only a median lobe, rectal examination may be entirely negative while all the rest of the clinical findings are typical. The diagnosis may then be confirmed by cystoscopy at which time the absence of bladder pathology of other types may also be noted.

TREATMENT

Treatment will be palliative or curative, palliative referring to any form of treatment that does not include satisfactory removal of the obstructing pathology. If a patient must be resigned to catheter life today it is because complications of renal or of cardiac type have advanced to an extreme degree before any effort was made to care for the urinary complaint. The duty and responsibility of deciding whether such heart or kidney damage places the patient beyond the pale of surgical relief falls squarely upon the family doctor who generally sees him first. It must always be remembered that proper drainage will give surprising results in allowing damaged kidneys to regain a fair working capacity, and that with improved elimination of nitrogenous waste a beneficial effect accrues to every tissue in the body, including a partially disabled myocardium. How far a doubtful case will improve by proper drainage and forcing of fluids can only be told by clinical trial.

The means of supplying drainage are only three: interval catheterization, indwelling catheter, and suprapubic drainage. Interval catheterization is generally unsatisfactory because both patient and physician after a time will tend to neglect it. It will either become a tiresome chore or because of increasing difficulty due to local irritation it will be used less and less frequently until finally the drainage is entirely unsatisfactory. Indwelling catheters furnish adequate drainage if properly placed and kept open by daily irrigation with some mild antiseptic solution. They always set up a urethritis, however, and this may cause an infection of the entire urinary tract by direct extension. A complication very liable to arise, especially in connection with catheter drainage of either type, is acute epididymitis. The pain and febrile reaction accompanying this process is often a serious drain on the patient, and its occurrence should be prevented by vasectomy done as soon as the patient consents to have proper care and before any extensive urethral instrumentation has taken place. The ideal procedure is suprapubic drainage carried out under local infiltration or light spinal anesthesia. If a catheter cannot be passed, either because of stricture or the conformation of the prostatic urethra, there will be no other choice. The emergency suprapubic stab with a trochar is not an accurate or safe surgical procedure even when the bladder is greatly distended. In a certain small percentage of cases the peritoneum extends well down in front of the distended bladder, so that a stab into the bladder will allow leakage of urine into the abdominal cavity. I cannot deny that it is often and even routinely used by some without accident; but neither can I forget two patients who have died of peritonitis following such drainage.

The atypical case that has little or no urinary difficulty except occasional complete retention will ask for nothing more than emergency catheter relief. Unless some intercurrent affliction interrupts his urinary history he will finally require a longer period of drainage, and yet as he will remember how he improved on former occasions he will want to be conservative to a dangerous degree. Any enlarged and congested prostate will diminsh in size after a period of bladder rest, and the patient may find himself again able to void with what seems to him comparative ease. The physician at such a time must choose between urging further care or letting the old man have his way. Continued and repeated delay with increasing nitrogen retention must finally result in uremia and death in every case, while proper surgical care promises an increased expectancy with a very low risk of fatality. The patient must be impressed with the fact that delay is fatal, while surgery has relatively little danger, and that such danger as does exist can be greatly reduced by attending to the urinary obstruction before serious kidney damage has resulted.

By curative treatment is meant a surgical attack on the obstructing prostatic enlargement with a view to reestablishing satisfactory voiding. Recently the choice of methods has been widened. There is no need to remind you of suprapubic prostatectomy or of the perineal operation. Either method in careful and experienced hands has given most gratifying results, and those who have cared for a long series of cases by means of perineal prostatectomy will be very slow and critical in accepting any procedure proposed as an improvement. The criterion to use in evaluating any operation should include at least the considerations of mortality and functional result. Such considerations as a few days more or less in the hospital, or the cost of dressings for a draining sinus, are so insignificant where life and happiness are at stake as to deserve no mention. A wave of enthusiasms for the relatively new transurethral methods of prostatic resection has swept the country in the last two years and there seems to be no reason to doubt that this new method constitutes a real advance in the surgery of the prostate, but this more recent development must not be regarded as a trifling minor operation. In the hands of many expert urologists the mortality has been high until considerable experience has been gained. The same causes of death have obtained as for the older surgical enucleations, namely, uremia, shock and sepsis. Preoperative preparation and general care of the patient are as important now as they were before, and the postoperative prevention of sepsis may be more difficult than it was with the older operations because of the fact that drainage of the operative field is inadequate and unsurgical unless a preliminary suprapubic vent has been established. It is likely that by far the larger percentage of prostatic obstructions can be taken care of by this so-called conservative method. Time alone, however, in conjunction with honesty and accuracy in follow-up methods, will tell the true value of the transurethral method.

There may be some difference of opinion among physicians as to just what we are striving for. Some will continue to be content with relieving the patient in the emergencies as they arise. Most will agree, however, that in this particular field we wish to see a larger percentage of our older men who are having urinary difficulty presenting themselves for care before the condition has existed so long that vital organs are seriously damaged. There is no questioning the fact that fear of mortality and poor functional results keep many a patient from securing the relief he earnestly wishes. It follows then that if fear is to be banished, better results must be shown the laity from all our hands. We can do better work if we see them early. They will present themselves earlier as they hear of more and more of their neighbors who have come through safely. If we give the greatest possible attention to the details outlined above more of them will come through safely and a circle of circumstance fortunate to both patients and physicians is thus established.

CLINICAL PATHOLOGICAL CASE REPORTS—II*

F. L. ROGERS, M. D., and J. MARSHALL NEELY, M. D.,
Lincoln, Nebraska.

CASE REPORT

A. A., aged 56, a white man, farmer, admitted to the hospital on November 21, 1933. He had been complaining of loss of appetite, loss of weight, clay colored stools, weakness, jaundice, nausea, vomiting and abdominal pain. All of these complaints had been noticed for a period of seven weeks. Until that time he had been in good health and had been able to carry on the usual work of a farmer. All of the complaints have become progressively worse since the onset. Loss of weight had been from 172 to 141 pounds. He had no complaints as regards his circulatory, urinary, respiratory or locomotor systems.

Past history and family history revealed nothing of importance.

Physical examination revealed a mal-nourished, jaundiced, white male who appeared to be acutely ill. His pulse was 88 and his blood pressure 130/80. The pupils were equal and regular, the tonsils atrophic. The teeth had all been removed and there were no enlarged lymph glands in the cervical region. The chest expansion was good. Pulmonary areas were resonant throughout and breath sounds were normal. The apex beat was in the 5th interspace in the midclavicular line. There were no murmurs. The abdomen was quite flat. The liver was just palpable under the costal margin. The spleen was not palpable. A mass, approximately 6 cm. long and 2½ cm. in width, could be felt in the epigastrium. This mass was firm, not particularly tender, not movable and lay near the mid-line. The recti muscles were soft and the colon was not palpable. Rectal examination revealed no abnormalities. The extremities were not unusual.

The red cell count was 4,510,000; white cell count, 5,650; hemoglobin, 89%. The urine had a specific gravity of 1.031; acid; albumin, negative; sugar, one plus; acetone, negative; diacetic acid, negative; bile, positive; a few granular casts; a few pus cells; icterus index, 77; serum biliruben, 25 mgm. per 100 cc. The blood Wassermann was negative. Sedimentation rate, 17 mm. in one hour.

A tentative diagnosis of carcinoma of the pancreas was made. The case presented such a hopeless picture that radical treatment was not justified. He was given 6,000 R. units over the pancreas (600 K. V. radiation, 70 cm. distance). For a time the patient seemed slightly better. The mass in the abdomen definitely decreased in size and became softer. However, the patient's general condition, after the first ten days, became progressively worse and he died on December 23.

---

*From the Lancaster County Hospitals Pathological Laboratory.

ABSTRACT OF NECROPSY

The body is that of an elderly male measuring 180 cm. in length; estimated weight 185 pounds. Nothing unusual is noted about the external appearance. On opening the abdomen the subcutaneous fat is found to measure about ½ cm. in thickness. The coils of intestines are smooth and shiny and there are about two liters of thin serous, densely dark, amber colored, bile tinged fluid in the peritoneal cavity. The omentum is adherent to the gallbladder and pyloric end of the stomach and is filled with nodules. The small intestine traced proximally from the ileocecal valve is not remarkable. The pleural and pericardial cavities are not remarkable. The heart shows nothing of significance.

The left lung is somewhat heavier than normal and is torn considerably in removal. The pleural surface is covered by tags of fibrous adhesions and the organ as a whole is somewhat meaty in character. Crepitation is markedly reduced throughout and on cut section the surface is very edematous but no areas of pneumonic consolidation are observed. Near the surface of the lower lobe there is a rather firm ill defined hard nodule which on cut section is found to be coarsely granular in appearance and distinctly yellowish in color. The right lung shows a similar picture and a similar tumor nodule is found in this lung.

The liver is much heavier than normal. The capsule is rough and is characterized by varying sized nodules which are yellowish red in color. These are located with the greatest frequency in the left lobe but some are also seen in the right lobe. The entire liver panenchyma is intensely bile stained and there is a mass of tumor tissue about the region of the neck of the gallbladder which obstructs the flow of bile in both the cystic and common ducts.

The spleen, kidneys, bladder and genital organs show nothing remarkable.

The stomach, duodenum and pancreas are removed en masse. On opening the stomach a large cauliflower-like area of tumor tissue is found located in the greater curvature. This involved an area of about 7 cm. in diameter. It does not completely encircle the lumen and the lesser curvature is not involved. On cut section through this tumor it is found to be characterized by many varying sized yellowish areas and the same is true of the tumor tissue found in the omentum. On cut section a tumor mass, found in the body of the pancreas is extremely hard, markedly swollen and throughout this tissue there are yellowish green areas of tumor tissue. Around this tumor tissue in the pancreas there is marked degeneration and fat necrosis.

The right adrenal is not remarkable. The left adrenal is found to be completely involved with what appears to be primary tumor growth. On cut section the exposed surface of the adrenal is yellowish red in color and reminds one of the tumor tissue seen in the areas of metastasis.

The mediastinum shows one metastatic nodule along the wall of the thoracic duct and is otherwise not remarkable. The thyroid shows nothing of note. The sentinal node about the left clavicle shows definite yellowish tumor involvement. There is marked involvement of the paravertebral lymph nodes with tumor tissue.

ANATOMICAL LESIONS:

Carcinoma or neuroblastoma of the left adrenal with metastasis to the stomach, pancreas, liver, lungs, thoracic duct, paravertebral and cervical lymph nodes; edema and congestion of the lungs, jaundice, metastasis to the lymph nodes about the bile ducts.

HISTO-PATHOLOGY:

Sections of the primary tumor, the left adrenal, shows the entire organ to be somewhat necrotic and densely infiltrated with blood. The entire cortex is occupied by islands and clumps of rather large polyhedral tumor cells showing some tendency to gland formation but usually arranged in strands. The cells are characterized by somewhat granular cytoplasm and a small nucleus which tends to be vesicular. The arrangement and character of the cells reminds one of the zona glomerulosa of the adrenal cortex. The medulla is entirely necrotic.

A section taken from the pancreas shows it to be infiltrated with the same type of tumor. Here, however, the tumor appears somewhat more undifferentiated. Many giant cells appear among the tumor cells.

Sections of the liver shows a large metastatic area of tumor tissue to be made up of medium sized polyhedral type of cell showing a marked tendency to acinae like arrangement. Giant cells are included here also. The liver cells about the tumor show varying degrees of degeneration and large deposits of hemosiderin.

Sections of the myocardium show nothing of note.

Sections of the spleen shows the pulp to be engorged with blood. The malphigian corpuscles are very small. Large deposits of hemosiderin are found here also.

The kidneys are not remarkable. They show no evidence of tumor tissue.

Sections of the tumor found in the greater curvature of the stomach shows the entire wall to be densely infiltrated with masses and clumps of varying sized and shaped epithelial cells which have a granular cytoplasm. In some regions the cells are larger and particularly in the region of the mucosa there is definite tendency to gland formation.

A section of the mass about the bile ducts shows the same type of tumor cell infiltrating the lymph glands.

Sections of the yellow nodules found in the lung shows them to be made up of varying sized, somewhat foamy cells showing a striking resemblance to the zona glomerulosa of the adrenal cortex. There is here, also, a tendency to arrangement into acini.

DIAGNOSIS:

Carcinoma of the left adrenal, with metastasis to the liver, pancreas, stomach and lungs.

COMMENT:

This case is unusual in that two organs which are common sites of primary carcinoma, are involved by tumor metastasis from a primary tumor arising from a rather unusual site of primary tumor growth, the adrenal. Proof that the adrenal is the point of origin is based on both gross and histologic findings.

A DEAD BLONDE

"After all, my dear, she's only a suicide blonde."

"Suicide blonde?"

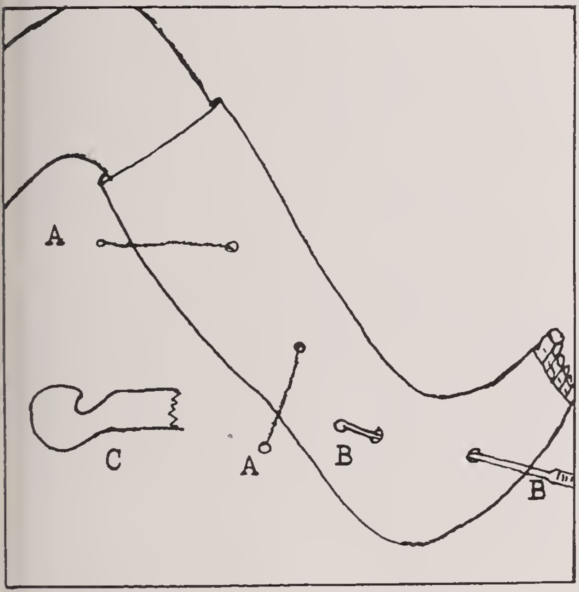
"Yes; dyed by her own hand."

REMOVAL OF CIRCULAR PLASTER CASTS—A SIMPLER WAY

R. L. HOOK, M. D.,
Lodge Pole, Nebr.

Snug fitting circular plaster casts, especially around a joint such as the knee or ankle, are somewhat difficult to remove by the ordinary methods available to the general practitioner. It is hard to insert one blade of the regular cast cutter between the cast and the skin without causing pressure on the underlying bony structures. Cutting the plaster with a cast knife is hazardous in that it is easy to cut too deep and damage the skin, to the discomforture of both the physician and the patient. The use of the recently devised plaster cast cutter is an easy and simple way of removing casts but there is a certain expense in the use of this machine and its cost does not allow every practitioner to have one.

In searching for an easier way to remove such a plaster cast I found that a Gigli wire saw cuts plaster very easily. I used a Galt trephine to make a series of holes about eight inches apart along the line on which I wanted to divide the plaster. With the modified flexible uterine sound it was easy to draw the Gigli wire saw under the plaster between the holes. The act of sawing the plaster requires very little time or effort and is of much more comfort to the patient and less disturbing to his state of mind. This method permits the physician to bivalve a plaster cast very easily, making of windows in larger casts is a matter of only a few minutes, and the appearance of the finished work is more pleasing than ordinary methods.



AA—Gigli Saw after insertion.
BB—Modified uterine sound.
C—Enlargement of uterine sound showing hook used to draw wire saw under the plaster between the holes.

PRESCRIPTION, PLEASE

Doctor: You have a bit of a chill. Go straight home and drink a good stiff shot of whiskey.

Patient: Er—would you mind letting me have that in writing?

MYOCARDOSIS—A SYNDROME: ITS RECOGNITION AND THERAPEUTIC MANAGEMENT

According to Walter L. Bierring, Des Moines, Iowa (*Journal A. M. A.*, Aug. 26, 1933), myocarditis implies a background of inflammatory phenomena, the sequel of the acute infectious diseases of childhood, rheumatic and streptococcic infections, which more frequently attack the valvular endocardium but may also involve the myocardium. Acute coronary thrombosis is now recognized as a distinct clinical entity, and its prompt diagnosis is of common occurrence. Chronic coronary artery disease or coronary sclerosis, likewise, permits of ready diagnosis. Angina pectoris and coronary disease may occur in manifold relationships. Chronic myocardial failure or insufficiency is associated to a greater or lesser degree with each of the preceding three forms of chronic heart disease. A careful history is essential. The history should include a careful investigation of previous infections, particularly such as could produce damage of the myocardium. A familial tendency toward diseases of the circulation is important and a positive history of the various indiscretions of life which tend toward early vascular changes. A proper estimate of the patient's reaction to effort has definite diagnostic value. Fatigability, tiredness or cardiac fatigue is one of the early signs of myocardial weakness. The mimicry of gastric symptoms in advanced coronary disease is well known, and it is logical that to a lesser degree this occurs in connection with myocardial weakness. Breathlessness is probably the most important feature of the myocardosis syndrome, but it again requires a fine distinction to determine whether this is a normal physiologic response or a pathologic manifestation. The signs of heart consciousness, as manifested by flutter, skipping beates, thumping and palpitations, occurring in middle life after a meal or physical effort, require careful evaluation. The sensation of substernal discomfort is the one symptom that most frequently causes the patient to seek medical advice. Substernal discomfort or distress, unlike breathlessness and palpitation, is rarely masked under any other guise. Certain vasomotor disturbances are a part of the syndrome, such as vertigo, giddiness, syncope and occasionally convulsions. The proper appreciation of the myocardosis syndrome offers the one hope to modify and possibly control the tendency to progressive and more serious myocardial damage, and, above all, it opens up a new field in preventive medicine that is worthy of the best efforts.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor........................Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman........................Madison
A. F. Tyler........................Omaha
B. F. Bailey........................Lincoln
R. B. Adams, Ex Officio........................Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. XIX April No. 4

THE MANTOUX TEST IN OMAHA AND LINCOLN

Fostered by the Nebraska Tuberculosis Association and by the aid of a grant from the CWA the Mantoux test for tuberculosis has been given to high school pupils in Omaha and Lincoln and it is planned that if an additional grant can be had, to extend the work to other parts of the state.

It is understood that the work in the Lincoln high schools is completed and that the results are about as follows: Some degree of reaction in 3%; positive reaction in 22.5%; no active cases. The results from Omaha are about as follows: 6,800 were tested. The positive reactors numbered 1,350, or about twenty per cent. No active cases.

The grant under which the work in the two cities was done was for payment of the work connected with giving the test and Nebraska Tuberculosis Association provided the tuberculin. The results obtained is said to demonstrate that the old belief that all children are infected with tuberculosis before adult age. is erroneous. It is also stated as certain that from the twenty per cent of reactors within a few years will develop the actual cases of pulmonary tuberculosis.

Quoting Dr. John F. Allen in *The Bulletin*: The purpose of this type of survey is first, to honestly inform and to educate public opinion, second, to encourage and stimulate the medical profession to an understanding and acceptance of the present known and proven conceptions of the tuberculosis problem. It is not impracticable, theoretical nor meddlesome. It subserves no function of organized medicine. Quite to the contrary, it demonstrates to the public how the youth of the country may and should be guarded and protected against tuberculosis. To teach and convince the public that the tuberculin reacting child should be x-rayed once a year from adolescence to adult life operates for the benefit of the individual, the community and the medical profession. It neither detracts from the prestige nor subtracts from the business of organized medicine.

THE CANCER PROBLEM IN NEBRASKA

The cancer problem is rapidly assuming an importance of first rank in the field of medicine. Its rapidly mounting death rate, now being second as a cause of death in the United States with an annual death toll of more than 125,000, presents a challenge to medicine in all its branches, both preventive and curative.

Great progress is being made in the study of this disease throughout the world and the eyes of the public as never before are focused on the profession for help in bringing down this rapidly increasing mortality. More and more it is being recognized that cancer is curable, but to be cured it must be seen early in the disease, promptly diagnosed and competently treated. Time is the all important factor in curing cancer. Temporizing methods must not be employed if the best service is to be rendered to the cancer patient.

The Nebraska State Medical Association at its 1933 annual meeting invited the American Society for the Control of Cancer to make a statewide cancer survey of Nebraska reporting its findings with recommendations to the state society for an improved cancer service throughout the state. This survey is to be undertaken in the near future and it is the privilege and the duty of all members of the association to cooperate fully in this undertaking.

This survey will undertake to determine the facilities in Nebraska for the diagnosis and treatment of cancer, where they are located, who administers them, the number of patients served in the hospitals of the state and the relation of organizations allied to medicine in this special field. It will be a fact finding survey and the program ecommended will be based entirely on the findngs within the state.

Similar surveys have been carried out in neighoring states, Iowa, Minnesota, Kansas, Misouri and Colorado, on invitation of the medical ocieties in these states. It is the policy of the American Society for the Control of Cancer to ndertake such activities in any state only when nvited to do so by the medical profession. because it believes that the control of cancer lies peculiarly in the hands of the medical profession.

This survey is made without financial cost to the state medical organization and offers a rare pportunity to obtain a comprehensive picture of the cancer problem in Nebraska. It is hoped the hospitals and physicians of Nebraska will support this undertaking to the fullest extent. There will be no general publicity about the survey or its findings until the report has been accepted and approved by the state medical society.

—* * * *

EXTRA-MURAL PSYCHIATRY

In the *Nebraska State Medical Journal* of May, 1933, we were given a short perspective through the editorial paragraphs, of the care of the insane now and fifty years ago. Another item deals with the exchange system or "bartering patients" first instituted at the Norfolk State Hospital. This system was referred to as the first step in a program of mental hygiene in a hospital district. It is interesting at this time to refer to these paragraphs and to further observe the natural evolution of that problem during the year which has elapsed.

The continued overcrowded condition of the State Hospital at Ingleside, the increase in number of commitments, to some extent due to the critical economic situation of the community, the desire to be of the utmost service to the community as well as to those afflicted with mental maladjustment, necessitated the services of a psychiatric social worker. This social worker is Miss Grace Buckley, who for the past seven years has been in charge of the field work of the extra-mural program of the Colorado Psychopathic Hospital.

One of the duties of Miss Buckley at Ingleside is to place in the community such patients as are capable of making an adjustment in life, becoming self-sustaining individuals through a period of guidance. This part of her work has even in this short period proved to be economically sound and successful. Another duty of the social worker is to serve as an interpreter of the home situation of the patient and the community to the psychiatrist at the state hospital. This of course is done by the social worker visiting the community from where the patient has been committed and contacting the members of the family as well as friends and acquaintances, in order to clearly picture to the psychiatrist the actual situation which has led to the mental maladjustment in that particular individual. With this knowledge in the hands of the psychiatrist, the problem resolves itself into changing the situation or changing the individual to such an extent that an adjustment is possible and the patient can again return to normal life in the community.

The increased realization among laymen as well as the medical profession of mental maladjustment has necessitated the formation of a Mental Hygiene Clinic in connection with the state hospital. This clinic has been in operation since the first of January. The cases dealt with in this clinic so far have been, first, relatives and friends of patients who have found themselves in need of psychiatric aid in order to continue in life without the necessity of a possible commitment to a state institution in the future. Secondly, such cases as have from time to time been recognized by the family physician to have some mental disorder either of a functional or organic nature. Such cases can frequently be handled entirely by the family physician, especially where this physician shows a necessary interest. Frequently an analysis of the patient and the situation is the only thing necessary and the physician then carries out the recommendation in the community. These cases whether functional or organic frequently make weekly visits to the clinic for psychotherapy or actual medical treatment.

Future development of this program is entirely dependent upon the needs of the community as they represent them to the state hospital. This extra-mural work is receiving a general discussion in Dr. Campbell's paper published in this issue.

—J. C. N.

NOTES ON THE MEETING OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The Council on Medical Education and Hospitals of the American Medical Association began in Chicago February 12, 1934, with the president, Dr. Ray Lyman Wilbur, outlining the past and present accomplishment of the Council. He began away back in 1905, when there were 166 medical schools in the United States, more than in the rest of the world all put together, with about 35,000 students. His review covered in some detail, the conceptions of the American Medical Association and its plans to bring things medical in the United States to a highest level. He covered the Association's conception of such a plan, the development of an organization through this Council, and much detail of the execution of this plan throughout the years.

During all of this period, medicine, both as to education and practice, has adapted itself more readily to scientific changes of the times than it has to the social, economic, and legal changes of the period. Dr. Wilbur believes that medical schools today with their many departments tend to develop tradesmen-like doctors rather than ones capable of meeting present day requirements. He believes that a new national survey is required. He believes that this will require even more courage to carry it to a successful termination than the one begun by the American Medical Association in 1905. He pointed out that today we have something over 13,000 medical students in our various medical colleges. Most of these colleges are rated as "A" schools, but the gap between the strong A's and the weak A's is marked in many places. The general end-product practitioner varies greatly, and his ability to meet the present-day problems socially, economically, and legally, as well as scientifically, are demanding modifications which, in his judgment, are to be brought about by the suggested survey.

Some of the features which must be emphasized in this new survey, were enumerated by him as follows:

1. There must be a better provision for graduate instruction; better and more uniformly distributed postgraduate instruction must reach the practitioner, even if it must be carried to him.
2. We must rid our curricula of more of the unimportant teachings in the development of our general practitioners.
3. The newer social conceptions of medical practice, including prevention and health examinations, must come in for adequate adjustments.
4. Nutrition and growth problems need attention.
5. Prenatal care of mother and child are still inadequate.
6. The relation of the medical practitioner to the dentist and nurse must be adjusted.
7. Practical psychiatry and a better application of psychology in the practice of medicine is necessary.
8. There is needed a better understanding of the relation of the hospitals to the medical school, than now exists. Non-teaching hospitals also are today required to deliver a service the cost of which in many cases exceeds the revenue for the care of the patient. Somehow, this must be adjusted, by tax or support by insurance.

These, and other problems, Dr. Wilbur believes are demanding a new survey. A review of the old basic science problem, and many others not here mentioned, are urgently demanding this survey, which he believes represents as great a need as any of the many problems receiving the attention of the Council since its organization.

The program of the Congress lasted two days. Many of the subjects referred to in Dr. Wilbur's summary were up for discussion in the other papers on the program. As usual, the Federation of State Medical Boards met with the Council in joint session, except Tuesday afternoon, when their program was separate.

The exhibits at the meeting were hardly as extensive as last year, but were quite interesting. Mr. Hall, who is the secretary of the Exhibits Department, organized in about 1930, is succeeding very well in putting a marked teaching force in his exhibits. This is done in various and unique ways. Instead of presenting cold facts in printed form, he uses marked maps, comparative figures, suggestive pictures, etc., which are not only attractive and interesting, but they give quickly a fundamental fact pertaining to the point in question. Many of them have a health-teaching motive. Others are purely statistical, and some are simply historical in character. I have invited him to send some of these to our State Medical meeting.

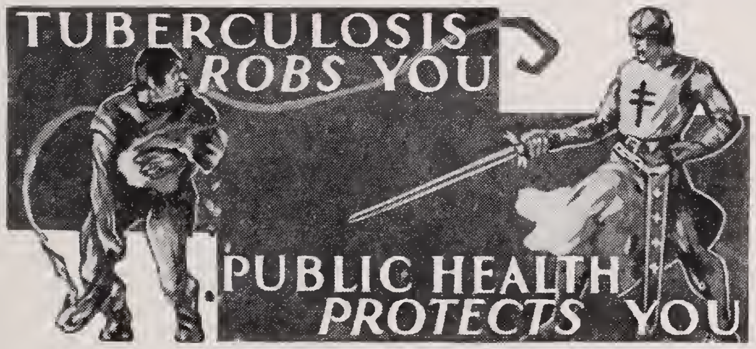
Many of the old familiar faces were to be seen at the meeting. Some new ones are always appearing. From Nebraska, the roll would include Drs. Poynter, Riley, Stokes, Wherry, Overgaard, and Kelly, from Omaha, and Dr. E. W. Rowe, from Lincoln.

—J. Stanley Welch, Lincoln.

HEALTH IN THE NATIONAL RECOVERY

We have been busy during the past few years reestablishing industry and commerce, and it has been our hope to do this well enough to give all healthy persons a chance to maintain themselves and their families. Without self-supporting work under self-respecting conditions of employment, neither personal nor social health can be expected. Recovery of economic balance we shall doubtless presently attain. At least we may hope for such adjustment between production and consumption as will permit individual initiative and profit without sacrifice of large groups of people to the exploitation of monopoly, whether this be of labor, or of capital, or of government.

Since 1929 there have been many forebodings expressed, that we would probably sooner than later observe a deterioration of health, parallel with the reduction of employment, income and standards of living, comfort, and enjoyment. All who are familiar with health trends realize that general mortality, as well as deaths from tuberculosis, and particularly deaths among infants, are very dependent upon the manner and material conditions of life. Regardless of technical, sanitary and medical measures applied directly to the reduction of tuberculosis, a large factor in the gratifying fall in the death rate from tuberculosis, in the United States in the past thirty years, has been the increase in national wealth, resulting in better living conditions shown by improved shelter, food, clothing, as well as the increase in leisure time of the wage earner and his family.



Christmas Seals Finance the Campaign Against Tuberculosis

There has been fear, widespread and persistent, that the children of today, especially those born and brought up since 1929, would presently reveal tendencies to ill health, defects of nutrition and growth, lowered resistance to the infections of childhood, and an increase in their death rate from all causes.

Let us now cast aside all such fears, answer the forebodings with facts of good augury, and accept only those warnings that tell us that we are not yet doing all we know how to do to develop health at a higher level, and to prevent quite unnecessary diseases and too early deaths.

Health, the most priceless possession of the people, has never been better secured by any nation in any era of our ancestors. Physicians and health officers throughout the nation have been recording the unexpected fact that with each year of the depression the health of the nation has improved. Year by year since 1928 all trustworthy tokens or trends in the health of our people of whatever age have been favorable. Preventable diseases such as tuberculosis, typhoid fever, and diphtheria have never been less frequent or less fatal than in the past twelve months of 1933.

Never in the recorded history of man have so great a mass of people representing so varied an agglomeration of races under one government, or within a nation's boundary, enjoyed such security of life, such expectancy of years, so high a survival rate of babies, so low an incidence of pestilential diseases. So important a disease of nutrition as pellagra has been less frequent. Malaria, a scourge in many states, has been less common and less fatal. No diseases of nutrition due to particular defects of diet have shown any increase, nor have infectious diseases shown a tendency to recur at the rate of former years.

Is this merely an accident of good fortune? No! It can be traced directly to two main factors of experience which have characterized our progress toward health at least since 1900, namely, increase in the understanding of the rules of right living among our people, and a command of scientific resources to defeat disease, which earlier generations did not possess.

Mothers have learned better how to feed and clothe their children and protect them against illness. Physicians have added to the care of the sick, immunizations protecting against typhoid and smallpox and diphtheria. The public, the taxpayer, the officers of government have supported the health services of county, city and state. While budgets have been reduced, and public health nurses dropped, while the full possibilities of public health service have been sadly crippled and in some places actually brought to an end by lack of appropriations, we have not forgotten our knowledge and we have continued to apply it individually when social resources have been withdrawn.

The year 1934 need not be an exception. We can, if we are determined, record another twelve months of better health. Education in right living costs little and is a great protection against loss. Neglect of disease robs not only the patient but the whole family. For the sake of national recovery we must insist individually and collectively upon support of both public and private health agencies.

We must make it possible to say to our children in the years to come that health prospered in the U. S. A. not only during the down grade but throughout the struggle upward from a depression that tested the very structure of contemporary society.

—Haven Emerson, President,
American Public Health Assn.

THE IMPORTANCE OF CHEESE

To use plenty of cheese is one way to use more milk. It is true that cheese does not contain all the food values of milk, but it does contain most of them. And cheese will keep where milk will not. It can be used in ways that milk cannot.

These are points to keep in mind, says the Bureau of Home Economics of the U. S. Department of Agriculture, especially if your food budget is a small one. They are one reason why the government is buying great quantities of cheese to distribute free to needy families. Government agents are now beginning to make these purchases with money allotted from relief appropriations, and the cheese they buy will be distributed by the Federal Emergency Relief Administration to State emergency relief administrations who will use it in their respective jurisdictions.

This will be whole-milk cheese, known commonly as just plain American cheese, though it is much like the English cheddar, and that name is used in the official definition under which the Pure Food law is applied. One stage of this cheesemaking process is called "cheddaring," after the English village of Cheddar where this kind of cheese has been made for more than a hundred years. Other kinds of cheese are made in this country, but not in such quantity as the American cheddar cheese. All this cheese distributed will be the processed kind and will be put up in half-pound packages.

Cheese, the Bureau of Home Economics reminds us, is not just something to season or flavor something else—a condiment, or accessory. Whole-milk cheese is a substantial food in itself, good in a main dish on a meatless day, for example, because it contains many of the same food values as meat, and other values besides. It is rich in protein, fat, calcium, and phosphorus, and in vitamin A—in other words, it contains the chief food values of whole milk.

There are, however, certain things to remember about cheese, it you would enjoy it most. It is a very concentrated food, and too much of it should not be eaten at one time. It should be eaten at a meal with a fruit or a vegetable or both. Whole-milk cheese is very rich in fat; therefore, it should be eaten with very little if any other fat.

Because cheese contains so much protein, it should be cooked at very low temperature. In fact, most cheese dishes should be cooked over water, or in a very slow oven.

The food value of cheese, as well as its flavor, makes it a valuable addition to many an oven dish, to a cream sauce, and to various soups. An onion soup, for instance, made with meat stock, and served with toasted bread on top and grated hard cheese over the toast, makes a delicious and likewise a very nutritious lunch, indeed a very substantial part of any meal.

Macaroni, or rice, or noodles, scalloped with tomatoes and cheese, makes a full meal in one dish. The Italian "polenta," made of corn meal mush and often served with tomatoes and cheese, is much like this in food value. A casserole of mixed vegetables, enriched by grated cheese over the top, can be another one-dish meal.

Corn rabbit, tomato rabbit, golden buck, cheese fondue, English monkey, creamed cheese on toast, are variations of the familiar Welsh rabbit, for which there are probably as many recipes as there are cooks who make it. Some Welsh rabbit recipes call for eggs, but this is an extravagance in food value as well as in money cost, because cheese duplicates the most important of the egg nutrients. The eggs, however, do give a flavor and texture that many people prefer. Tomato rabbit, or "ringtum diddy," is practically a whole-meal dish because of the cheese, tomato, and toast combination. Cheese toast and cheese dreams—which are plain cheese sandwiches browned in fat—are quick and easy ways to provide a substantial lunch or supper dish.

—Bureau, Home Economics.

EDITORIAL PARAGRAPHS

Speaking about their operations as some women like to do is described by some wag as an "organ recital."

The paragrapher has been a slacker during the past month as this column well illustrates. He hopes to do better hereafter.

The Medical Women's Association of Omaha passed resolutions of love and respect to the memory of the late Dr. A. D. Dunn, at a recent meeting.

The next basic science examination will be given May 1-2, University College of Medicine, Omaha. Applications must be on file 5 days prior to date of examination.

The annual meeting of the Nebraska State Medical Association will be held at the Cornhusker hotel, Lincoln, May 22, 23 and 24. It is hoped there will be a record attendance this year.

If you are delinquent April 1st you are suspended from active membership in the Nebraska State Medical Association. Prompt payment of dues to your county society secretary will result in your reinstatement. Delinquents are not entitled to the *Journal;* they are not eligible to medical defense.

Recent investigations made by the German physiologist, Bethe, seem to disprove the theory that left handed persons are mentally or physically inferior. Men who lost their right arms in the World war soon learned to use the left arms equally well. A survey showed that left handed persons were better in examinations on an average, than right handed persons.

In an address given before the "Conference on the Medical Profession and the Public" in Philadelphia, Michael M. Davis, Ph. D., promulgated the following dicta, with which few will find fault, whatever we may think of his argument leading up to the pronouncement: The American "wants medical service not as a charity, but paid for on a basis consistent with the self-respect of American citizens. He wants a medical service which is so organized as to furnish him with continuous contact with a personally interested physician and which does not confuse and subdivide him among a number of independent competing specialists. He wants a system of paying for medical service which will develop the maximum paying power from his income, and remove the hazard of unexpected sickness bills occurring at the time when his paying power is usually least. He wants a system of payment which will stimulate the prevention rather than the care of sickness. He wants good hospitals which are available to him geographically and financially."

OBITUARY

Henry F. Hewitt, Dunning, Nebr.; native of Rockford, Ill.; State University of Iowa, College of Medicine, 1897; in practice at Bristow, for three years previous to 1906 when he located on a claim in Brown county from which he practiced over a wide area for about fifteen years; for the past eight years he was located at Dunning; a man possessed of the noble qualities of the true pioneer doctor with service as the watchword; died March 2, 1934, aged about sixty-five years.

Charles C. Shepard, Ord, Nebr.; native of Randolph, New York; Hahnemann Medical College, Philadelphia, 1901; in practice at Ord for thirty-two years; one of the best loved citizens of the community; a public spirited man; died of coronary embolism, February 24, 1934, aged about seventy-seven years.

Dennis Neville, Hildreth, Nebr.; native of Canton, Ill.; Illinois Medical College, 1900; physician at Hildreth for twenty-six years; a friendly physician, beloved in his community; member Nebraska State Medical Association; died March 5, 1934, aged seventy-three years.

AN ODE TO NURSES

A nurses' life is a busy life,
She works from morn till night;
Always easing someone's pain
And making things come right.
Her presence is a blessing
To every suffering soul;
And to help each one to health again
Is every nurse's goal.

The doctors come and the doctors go,
But the nurse stays on the job,
Obeying the patient's simplest whims
When her heart is heavy as sod.
She works all day, then she works all night,
With always a pleasant smile;
And a cheery word to the suffering ones
Tho' she has walked many a mile.

The sweetest thing in a nurse's life
Is the day the patient's well,
And she knows her work has wrought the deed,
It makes her tired heart swell.
When she says good-bye to one she's nursed
There's peace comes from above
As she clasps the hand at parting time
Of one she has learned to love.

Oh, here's to the nurses all over the land
Who give the best that they have
To relieve their suffering fellow men
And make this old earth glad.
There are few who sacrifice so much
As those who care for the ill;
And we hope they receive their just reward
But keep on working still.

—Mrs. H. M. Harvey.

"A doctor is a man who makes his living directing patients to a specialist."

TUBERCULOSIS ABSTRACTS

THE DOCTOR'S OFFICE AS A HEALTH CENTER

Virtually every qualified physician in Detroit has become, to all intents and purposes, a deputy health commissioner, and his office a center for preventive medicine.

The ultimate objective of the plan is to have the family doctor take care of his patients in health as well as in time of illness. Another objective is to reeducate the public to look to the physician in private practice for such preventive services as diphtheria protection, smallpox vaccination and periodic health examinations, rather than to depend upon public agencies and free clinics—in short, to impress upon the public mind the fact that preventive medicine is a purchasable thing, and something that is to be paid for in the same manner as any other desirable commodity.

FAMILY DOCTOR IS THE UNIT

The Detroit Plan is a group plan—the group being the organized medical society. It is not built about a unit or community health service constructed around a clinic or hospital center, but rests upon the family physician who becomes the unit on which medical practice is constructed. At present 1,100 doctors are active participants. There is no insurance scheme but a reasonable honorarium is paid to physicians for services rendered in their own offices to those who are unable to pay. Funds for this purpose come from the budget of the health department.

Physicians who have agreed to cooperate abide by certain orders and regulations prepared jointly by the medical society and the health department. The plan began with a diphtheria prevention program. It was agreed that on certain days the cooperating physician will give toxin-antitoxin or toxoid for one dollar per treatment. The agreement does not hinder the physician from charging his client any price he chooses if the patient comes at any other hour. The physician also agrees that if the patient cannot pay he will render the service free to the patient and the health department agrees to reimburse him at the rate of fifty cents for each service. Each cooperating physician is supplied with record cards for his own use, and postcards which he mails to the health department for recording each series of toxin-antitoxin or toxoid treatments.

This scheme enables the health department continually to broadcast to the public that diphtheria immunization may be obtained at a certain price or for nothing if one is unable to pay.

While the plan was introduced with the diphtheria prevention campaign the ultimate purpose is to secure the participation of every qualified and prepared physician in the practice of preventive medicine. Recently tuberculosis prevention was added to the scheme. This plan is regarded not as a substitute to the tuberculin testing and x-ray service in the schools as at present conducted, but as a supplement to it. The procedure is outlined in the following circular which was sent to all physicians in Detroit.

OUTLINE OF PROCEDURE

"Children and adults will be urged to come to you by an active educational program through the radio, billboards, newspaper articles, and speakers before lay groups.

"There will be issued to school children a 'Notice to Parents' urging that the children be taken to their physician. If parents do not have a regular physician the Wayne County Medical Society will furnish them with the name of one or two cooperating physicians who reside in their neighborhood.

"The first visit should include a tuberculin test and a general physical examination. Tuberculin for the Von Pirquet test can be secured without charge (for Detroit) from the Department of Health, at the Wayne County Medical Society, or at the Detroit Tuberculosis Sanatorium.

"Every individual who has a positive tuberculin test should have an x-ray examination. The roentgenologists have agreed to accept your statement regarding the ability of the individual to pay for the x-ray service. If you feel that the patient is unable to pay even a part of the x-ray cost, he may be sent to the Herman Kiefer Hospital where the x-ray examination will be made without charge (for residents of Detroit) and a report will be sent to you.

"The charge for this examination should be arranged between the physician and the patient but no one should be turned away because of inability to pay.

"We expect that a fee of ten cents will be paid for each report sent in.

"When a positive diagnosis is made, the case should be reported to the Department of Health on the regular forms provided for that purpose. The state law requires that these records be not open to public inspection."

With this outline was sent a letter signed by the Wayne County Medical Society, the Detroit Tuberculosis Sanatorium and the Department of Health inviting the physicians to participate. Those who reported received a second letter thanking them for their cooperation, stating where tuberculin might be obtained and urging them to attend a series of clinical conferences arranged by the joint staffs of the sanatoria. With this letter were enclosed examination blanks, and postcards on which to report cases found.

Health officials and representatives of medical associations are watching with keen interest the experiment at Detroit. While it may not be adaptable for all communities it throws light on the problem of medical and public health relationships and suggests the basis on which cooperation may be affected.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was held Tuesday, February 13, President Hamilton in the chair.

Dr. John F. Allen spoke briefly on the Tuberculin Testing Survey sponsored by the Nebraska Tuberculosis Society.

The first paper on the scientific program was the Annual Report of the Tumor Clinic of St. Joseph's Hospital, read by Dr. James Kelly and discussed by Drs. Overgaard, Russum and Herbert Davis. Dr. Donald Wilson gave the next presentation, Some Skin Manifestations of Allergy.

Dr. Tyler gave a report of two cases of Fibromata in the Vaginal Wall and Drs. F. C. Hill and T. D. Boler reported an unusual abdominal tumor.

At the meeting of February 27, the scientific program was a Symposium of Acute Rheumatic Fever and Its Sequellae:

Dr. J. Harry Murphy, "Rheumatic Fever and Heart Disease in Childhood." Discussion by Dr. J. A. Henske.

Dr. E. L. Bridges, "Rheumatic Fever from the Internist's Viewpoint." Discussion by Dr. M. C. Howard.

Dr. B. M. Kully, "Rheumatic Fever from the Viewpoint of the Otolaryngologist." Discussion by Dr. John B. Potts.

Dr. Carl B. Russum, "The Pathology." Discussion by Dr. H. E. Eggers (by invitation).

At the close of the symposium there was general discussion participated in by Drs. J. Harry Murphy, Henske, Potts and Russum.

—Abstracted from "The Bulletin."

More than fifty physicians and their ladies attended ie meeting of the **Madison Six County Medical Soety** in the basement of the Congregational church, orfolk, February 20. Following a fellowship dinner r. Rodney Bliss, Omaha, gave a lecture, illustrated y slides, on "Gastric Ulcer." He dwelt mostly on ie medical management. The diagnosis of gastric lcer depends fifty per cent on history, twenty-five er cent on x-ray and twenty-five per cent on clinical bservation and judgment. Rest in bed and the Sippy iet is essentially the treatment. Recurrences are to e expected after a variable period. Most gastric lcers are medical cases; but when surgery is indiated there should be no hesitation in carrying out he surgical procedure.

Dr. Palmer Findley, Omaha, spoke on "X-ray and adium Treatment of Fibroids of the Uterus." Fifty er cent of women after fifty have fibroids, but few roduce symptoms. The treatment of fibroids genrally should be by raying either with radium or the -ray. To this dictum the rapidly growing tumor is n exception, for such tumors usually are degeneratng and should be removed promptly.

The regular meeting of the **Richardson County Medical Society** was held at Falls City, February 21st with 23 doctors present. The program:

"Management of Hemorrhage in Peptic Ulcer," Dr. M. C. Howard of Omaha.

"Diagnosis and Treatment of Obesity," Dr. J. F. Gardiner of Omaha.

"Eczema Due to Contact," Dr. J. A. Borghoff, of Omaha.

The **Hall-Howard-Merrick Counties Medical Society** met at the Stratton hotel, a 7 o'clock dinner being followed by the usual monthly business session at 8 o'clock. Dr. W. D. McGrath, of Grand Island, presented details of a case of anthrax, which is not only an unusual disease, but one of great importance. The subject of anthrax was discussed by Dr. W. J. Moslander, veterinarian of this city, who has had much experience and contact with this disease both in human beings and in animals. Discussions appeared highly interesting to those present.

The **Sixth Councilor District Medical Society** met at Seward over a dinner at the Windsor. About thirty were present. The program was a symposium on heart disease put on by Lincoln physicians, and was well presented. Dr. Floyd Rogers discussed "Rheumatic Heart Disease"; Dr. Harry Flansburg presented "Thyroid and Syphilitic Heart Disease"; Dr. George W. Covey, "Coronary Thrombosis"; Dr. J. Marshall Neely, gave an illustrated talk on the "Pathology of Heart Disease."

The **Otoe County Medical Society,** after a dinner at the Grand hotel, Nebraska City, March 12, carried out the following program:

"Surgical Infections of the Lung," Dr. Joseph Weinberg, Omaha.

"Medical Infections of the Lung," Dr. John Allen, Omaha.

"Tumors of the Breast, Their Operative Treatment," Dr. Alfred Brown, Omaha.

The **Southwestern Nebraska Medical Society** held a meeting at McCook, March 8.

D. L. Morse, M. D., Hayes Center, discussed the "Tonsil Problem" with discussion led by C. R. Carlson, M. D., Wauneta.

"Measuring Impalpable Objects With X-rays," by J. N. Stewart, M. D., of Stratton. Discussion by L. H. Morsel, M. D., of Cambridge.

"Review of Recent Literature on Causes of Prostatic Hypertrophy," George Hoffmeister, M. D., of Imperial. Discussion led by D. H. Morgan, M. D., of McCook.

The **Phelps County Medical Society** held a meeting at Holdrege, March 4.

The entire time of the meeting was taken up with a heated discussion of the ethics of advertising, some of the doctors expressing themselves very unfavorably over the fact that "hospital" cases seem to be given considerable attention by the newspapers. As a consequence all newspaper advertising has been discontinued by doctors, including hospital advertising.

HUMAN INTEREST TALES

Dr. J. B. Dierker, Lawrence, has been ill recently.

Dr. J. D. Lutton, Laurel, was reported ill last month.

Dr. Louis Katzberg, Omaha, has located at Red Cloud.

Dr. C. T. Ingham, Wayne, has recovered from an attack of pneumonia.

Dr. and Mrs. J. A. Henske, Omaha, recently returned from a trip to California.

Dr. and Mrs. Charles Lucas, Shelton, have returned from a trip to California.

Dr. Eric Pfeiffer, Wilber, has been a patient at the Mayo clinic for some time.

Dr. Olga Stastny, Omaha, enjoyed a medical cruise to the Carribean in March.

Dr. J. M. Willis, McCook, spent some time last month at the Mayo clinic.

Dr. C. W. Weeks, Ord, is in New York taking post graduate work under Erdman.

Dr. J. B. Williams, Polk, was in a car wreck recently, but luckily escaped serious injury.

Dr. W. J. Douglas, Atkinson, has been elected commander of the Legion of the Second district.

Dr. and Mrs. B. F. Richards, Crawford, visited their daughter at Fort Warren, Cheyenne, recently.

Before the Pasteur club, Dr. Victor E. Levine, Omaha, recently spoke on "Diet and Nutrition."

Dr. and Mrs. J. B. Potts, Omaha, attended the Pan-American Medical conference cruise last month.

Dr. J. M. Curtis, Tecumseh, sustained serious head injuries when struck by the blade of a windmill.

Dr. L. L. Wood, who has been in Lyman in practice for a number of years, has located at Benkelman.

Dr. M. E. O'Keefe, Council Bluffs, discussed the goiter problem before the Lancaster County Medical society, recently.

Dr. William Rathmann, a Blair product, in the government service at Seattle, has been promoted to a surgical assistantship.

Dr. W. H. Crawford, for a time located at Rushville, has returned to Omaha and has become associated with Dr. S. J. Meany.

Dr. T. L. Havlicek, assistant physician at the State Tuberculosis hospital for the past three years, has located at Amherst to practice.

Dr. George E. Neuhaus, Omaha, recently gave an address before the Professional Men's club on the "Influence of the Emotions on Thinking."

Dr. C. P. Jeffers, for a short time located at David City, has received an appointment in CCC work and has gone to Eureka, Calif., to assume his duties.

Dr. L. J. Owen of Lincoln gave a paper before the Pan-American Medical conference, which this year was conducted as a cruise to Central American countries and the West Indies. The conference began on March 13 at New York City and the cruise started March 14, touching Havana, Cuba; the canal zone, Cartagena, Puerto Cabello, La Guiara and San Juan, Porto Rico.

LEG ULCERS DUE TO THYROID DYSFUNCTION

Milton H. Cohen, York, Pa. (*Journal A. M. A.*, Jan. 27, 1934), reports a case of deep ulcerations of the lower extremities associated with myxedema. The internal administration of thyroid extract quickly healed, in a few weeks, ulcers that had persisted unchanged for six years. The cutaneous changes in diseases of the thyroid are not well understood or explained, and the relationship between circumscribed myxedema of the legs and leg ulcers of obscure etiology is suggested. The presence of myxedematous symptoms in cases of hyperthyroidism seems rather anomalous. Most of the cases reported of circumscribed myxedema of the extremities occurred in exophthalmic goiter conditions following operation. In the author's case the patient noted the return of her ulcers when the basal metabolism was high as well as when it was low. The presence of hypothyroidism and hyperthyroidism in the same patient at the same time is rather confusing and difficult to explain. Richter quotes Kocher as assuming that exophthalmic goiter has three stages: a primary stage marked by intense symptoms, a secondary stage marked by a relenting and changing of the symptoms in accordance with the intervention of endocrine correlations, and a third stage characterized by regressive changes. Since all the parts of the thyroid and the other endocrine glands are not equally affected, the clinical picture can vary enormously. Thus, for instance, part of the thyroid may return to a normal colloid condition, or the regressive changes may advance to such an extent that atrophy, which is ordinarily not a part of the histopathologic picture of exophthalmic goiter, comes to the fore and the hormone secretion reacts with hypothyrosis instead of with hyperthyrosis. Therefore, Richter believes that the paradoxical finding of myxedematous cutaneous symptoms in exophthalmic goiter has its explanation in a tertiary stage of exophthalmic goiter, which is hormonally associated with hypothyroidism. A basal metabolism test in cases of severe ulcerations of the lower extremities that are not amenable to treatment might in some cases help to solve the problem, and thyroid extract used, both internally and locally, might be useful in healing some of these lesions. In every case of severe ulcerations of the lower extremities a careful physical examination and laboratory study should be made, for the majority of such disorders are due to systemic changes and not to local causes.

ROSTER OF OFFICERS—1934

Adolph Sachs, Omaha, President	1933
Joseph Bixby, Geneva, President-elect	1934
George L. Pinney, Hastings	1935
William Shepherd, Rulo	1935
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1936
W. R. Boyer, Pawnee City, Chairman	1936
R. J. Lehnoff, Lincoln	1936
E. L. Brush, Norfolk	1936
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
E. G. Zimmerer, Chairman Medical Section	Lincoln
Morris Nielsen	Blair
W. J. Arrasmith, Chairman Surgical Section	Grand Island
J. W. Duncan	Omaha

ENTERTAINMENT COMMITTEE

Dr. Harry Taylor, Chairman	Lincoln
Dr. Chas. Arnold	Lincoln
Dr. Roy Whitham	Lincoln
Dr. A. D. Munger, Chairman Exhibitors	Lincoln
Dr. Harold Morgan	Lincoln
Dr. George Misko	Lincoln

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
A. E. Buchanon	Fremont
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XIX Norfolk, Nebraska. May, 1934 No. 5

CONTENTS

Page
Tentative Program, Annual Meeting Nebraska State Medical Association 161
Tentative Program, Annual Meeting of the Woman's Auxiliary 162
Collective Individualism in Medicine, E. H. Skinner, M. D. 163
The Causal Relationship of Trauma to Paralysis Agitans, From the Surgeons Viewpoint, H. C. Miller, A. B., M. D., F. A. C. S. 165
Cardiac Therapy, Frederick Niehaus, M. D. 168
A Review of Digitalis Therapy, Maine C. Andersen, M. D. 172
Sexual Neuroses as Problems in General Practice, A. L. Cooper, B. Sc., M. D. 176
A Practical Consideration of Body Complaints in the Absence of Evidence of Organ Pathology, Richard H. Young, M. D. 179
Newer Conceptions of Blood Pressure Readings With Relationship to Body Surface and Weight, A. C. Stokes, M. D. 182
The Influence of Heredity in the Transmission of Ocular Defects, Charles M. Swab, M. D. 184
Clinical Pathological Case Reports—III, F. L. Rogers, M. D., and J. Marshall Neely, M. D. 187

EDITORIAL—

Page
The Possibilities of the Genoa Indian School Property 190
A Question of Mental Competency 190
The Annual Meeting, Your Meeting 190
Presenting the Incoming President 191
Epidemic Appendicitis? 191
Mother's Day and Maternal Mortality 191
Authoritative Health Education 192
May Day—Child Health Day 193
The Floating Congress of the Pan American Medical Association 193
The Restoration of the General Practitioner 194
Application of Insurance Principal to Medical Fees 194
Editorial Paragraphs 195
Greetings to the Woman's Auxiliary 196
Auxiliary News Notes 197
Philadelphia Academy of Surgery 197
Venereal Disease Information 197
Nebraska Society of Radiographers 197
Annual Meeting, Nebraska Tuberculosis Association 197
The Societies 197
Human Interest Tales 198
Books Received 199
Books Reviewed 199

TENTATIVE PROGRAM
ANNUAL MEETING NEBRASKA STATE MEDICAL ASSOCIATION

Cornhusker Hotel, Lincoln, Nebraska — May 22, 23, 24, 1934

Tuesday, May 22, 1934 — 8:30 A. M.

Invocation—

1. The Diseased Uterine Cervix With a Preliminary Report on Schiller's Lugol Test............R. J. Stearns, Omaha
2. The Clinical Interpretation of Hemoglobin Estimates............J. D. McCarthy, Omaha
3. Correction of Deformity of Velum and Naso-Pharynx in Cleft Palate Surgery to Insure Better Speech — (Ernst-Holle Method)............H. M. Boyne, Omaha
4. Fractures of the Forearm............B. R. McGrath, Grand Island
5. The Management of Hemorrhage in Peptic Ulcer............M. C. Howard, Omaha

Tuesday, May 22, 1934 — 2:00 P. M.

Installation of the President of the Nebraska State Medical Association............Dr. A. E. Cook, Presiding
Introduction of President-elect Dr. Joseph Bixby............Dr. Adolph Sachs
Address............Dr. Joseph Bixby, President-elect

1. The Treatment of Chronic Empyema............J. Dewey Bisgard, Omaha
2. *Malignancies of the Colon............W. A. Fansler, Minneapolis, Minn.*
3. A Review of the Present Status of Irradiation in Living Tissue............E. W. Rowe, Lincoln
4. The Value of Sequestration Anaemia in Surgery............C. H. Newell, Omaha
5. Federal Funds for Physicians Rendering Service to the Indigent............B. F. Lorance, Auburn

Wednesday, May 23, 1934 — 9:00 A. M.

1. Cancer, With Special Reference to Palliative Treatment .... S. A. Swenson, Oakland
2. A Typical Goitre .... Max Emmert, Omaha
3. .... *Edwin P. Sloane, Bloomington, Ill.*
4. The Choice of Operation in Disease of Biliary Tract .... H. H. Everett, Lincoln
5. The Role of Psycho-Therapy in General Medicine .... A. E. Bennett, Omaha
6. R. A. Fenton, D. D. S., Chairman Department of Oral Surgery, University of Iowa. Guest—Courtesy of Nebraska State Dental Association.

Wednesday, May 23, 1934 — 2:00 P. M.

1. The Larynx and Its Relation to Bronchoscopy and Oesophogoscopy (With Illustrations) .... James P. Rigg, Grand Island
2. Surgical Address—Oesophogical Diverticulum .... W. J. Arrasmith, Chairman Surgical Section, Grand Island
3. Knee Joint Injuries .... *Kellog Speed, Chicago, Ill.*
4. *Address .... W. L. Bierring, President-elect American Medical Association, Des Moines, Iowa*
5. Appendicitis .... Clarke E. Beede, David City

Thursday, May 24, 1934 — 9:00 A. M.

1. Transportation and First Aid in Fractures of the Extremities .... C. Fred Ferciot, Lincoln
2. The Significance of Nervousness in Children .... S. W. Dishong, Omaha
   Discussion .... B. F. Williams, Lincoln
3. Medical Address .... Edmond G. Zimmerer, Chairman Medical Section, Lincoln
4. *Acute Peritonitis .... Thos. S. Orr, Kansas City, Mo.*
5. *Diets and Disease .... C. J. Barborka, Chicago, Ill.*

Thursday, May 24, 1934 — 2:00 P. M.

1. Treatment of Infantile Eczema .... W. O. Colburn, Lincoln
   Discussion .... J. A. Henske, Omaha
2. Methods of Infant Feeding as Used in the Newborn Clinic, University of Nebraska College of Medicine the Past Three Years .... C. G. Weigand, Omaha
   Discussion .... Floyd S. Clarke
3. Nephritis in Children .... G. G. Henning, Norfolk
   Discussion .... Clyde J. Moore
4. Intravenous Therapy in Pediatrics .... R. Bruce Eldredge, Omaha
   Discussion .... H. B. Hamilton, Omaha
5. Tuberculosis in Children—Lantern Slides .... E. W. Hancock, Lincoln
   Discussion .... J. H. Murphy, Omaha
6. Report of Cases of Poisoning Due to Shoe Dye .... R. E. Harry, York
7. Diarrhoeas in Infancy .... A. G. Dow, Omaha
   Discussion .... E. S. Wegner, Lincoln
8. Pseudo-Paralysis of Childhood .... John V. Reilly, Grand Island

TENTATIVE PROGRAM
ANNUAL MEETING OF THE WOMAN'S AUXILIARY OF THE NEBRASKA STATE MEDICAL ASSOCIATION

Registration at Headquarters .... Hotel Cornhusker

Tuesday, May 22, 1934

10:00 A. M. Executive Session .... Hotel Cornhusker
12:30 P. M. "Buffet Luncheon" .... Hotel Cornhusker
2:30 P. M. Garden Tour

Wednesday, May 23, 1934

10:00 A. M. Annual Business Meeting .... Hotel Cornhusker
Mrs. B. F. Williams, Presiding
12:30 P. M. Luncheon and Program .... Country Club
(Make Reservations at Headquarters)
3:30 P. M. Reception and Tea .... Governor's Mansion
6:30 P. M. Annual Banquet .... Cornhusker Ballroom

Thursday, May 24, 1934

10:00 A. M. Executive Session .... Hotel Cornhusker
Mrs. H. R. Miner, Presiding

COLLECTIVE INDIVIDUALISM IN MEDICINE*

E. H. SKINNER, M. D.,
Kansas City, Missouri.

This invitation to address a general session of the Omaha Mid-West Clinical Society is particularly gratifying because I have enjoyed a more or less active part in the development of the Clinical Conference idea in this and other portions of America. This society and this conference is a distinct advance in medical society methods. Your society replaces an old society in this territory and my acts as its last president made the transition easy and painless. Whatever rights, titles and chattels remained to the Medical Society of the Missouri Valley now find an easy and glorious resting place in these beginnings of a new order that will preserve the ethical standards of the old amidst the new ways and means.

The clinical conference idea has been officially considered but not adopted by the American Medical Association. Clinical conferences, conducted by the American Medical Association, in about twelve centers in America, rotating at monthly intervals, could distribute to larger audiences and a greater percentage of American physicians than the single annual A. M. A. meeting, the progressive story of medicine. The annual meeting of the American Medical Association could then provide greater time and more generous discussion to the deliberations of the House of Delegates and the Board of Trustees. There would be more and better consideration of the political and economic factors of medical practice. The spring meetings of the Committees of the A. M. A. upon Medical Education, Licensure, Economics, et cetera, are enjoying greater attendance and could easily be combined with the House of Delegates. We require more display of statesmanship in medicine. It is my humble observation that these spring A. M. A. meetings provide thoughtful exercises that may serve to produce more medical statesmen. Clinical conferences, distributed with due regard to favorable geographical convenience, will serve to bring the high points of scientific medical progress and practice to all the physicians in the country.

When this invitation came to me last May, I immediately proposed the title as printed in the program: "And the Doctor is Still With Us." My abstract stated: "Through the cycles of economic stress and prosperity, the physician has constantly served an increasingly confident clientele. Times do change but never has the intimate relationship of patient and physician been seriously altered by feudal monarchistic or democratic systems of government. It becomes increasingly doubtful that the spirit of the true physician will be damaged by modern socialistic, communistic or insurance schemes of medical care. Methods and means may vary somewhat with the times but the traditions as expressed in the Hippocratic oath must and will persist."

Already that paper has been written and, somewhat deleted, used as a radio talk for the Fall Clinical Conference of the Kansas City Southwest Clinical Society, early in October. It was rather a statement of background and an exposition of the attitude of ethical practitioners toward the changing times that are now upon us. I am inclined to discuss some practical features which may tend to help us out of our deepening difficulties under the title of:

COLLECTIVE INDIVIDUALISM IN MEDICINE

The perils of magniminity are now upon us. Taxations mount on high. Philanthropies suffer from failure of dividends. Large charity clinics supported by endowments are embarrassed. Those supported by donations or taxations are being questioned, catechized and investigated by donors, legislatures and taxpayers committees. Programs by state institutions, principally medical schools, their clinics, and state hospitals which were promoted by enthusiastic specialists or dominant local medical characters are under fire. During the prosperous years these programs, which were near-approaches to state medicine, piled up influence through certain groups of socially-minded intelligentsia, both lay and medical. During prosperity there were still enough of the population able to pay fees to practitioners of medicine. With the depression there is a mounting of the percentage who require charity medicine and that small remaining percentage capable of paying fees is so embarrassed by decreased income and increased taxation that the actual collectible income of the practicing medical profession is insufficient to provide a well distributed living to our profession.

Consequently (and there are many consequences) but firstly: our profession begins to inquire into the justice of the time-honored system of supplying free medical professional care to those unable to pay fees. Social welfare groups have established certain arbitrary wage scales or a yearly income basis for determining admissions to charity clinics and hospitals. Both the profession and the taxpayers are inquiring into the justice of such arbitrary scales established in the ascendency of universal prosperity. The philanthropic backers, excepting their ambitious executive secretaries, are out of the picture simply because their income sources are nearly dry.

---

*Presented before the 1933 sessions of the Omaha Mid-West Clinical Society, October 29 to November 2, 1933.

A second consequence: Medical schools, both endowment-supported and tax-supported, have provided a malicious extension into the private practice of medicine by clinics, free or semi-free laboratory service, crippled-children programs, cancer programs, ad infinitum. The ad infinitum depending upon the faculty influence, political preference or the native dominant characteristics of particular physicians in different parts of our grand and glorious democracy—sometimes referred to as a republic. Medical schools continue to turn out doctors and at the same time place increasing limitations upon the competitive field of medical practice into which these graduates must sink or swim.

Example: The dean of a state medical school, who is a pathologist, guides the training of his medical students and surely he offers the goal of a future living for such students who complete their course and become licensed to practice within their home state. But this pathologic dean seeks and secures the pathological material of more than ten hospitals in his own state and at a ridiculous fee, too low to mention. This low fee is possible because the state houses and maintains his teaching pathological laboratory and all his technical assistants. His former students who specialized in pathology are willing to complete such examinations at reasonable fees but their laboratories are not endowed or tax supported; their technicians are not students who polish apples. Why should a sufficiently salaried dean compete with his qualified students? Should a parent rob his child of food or should a parent sacrifice himself for his children. Should medical students be trained to practice medicine as a private enterprise and then be robbed of their legitimate field of practice? Why should state or philanthropic medical institutions indulge their faculty members to encroach upon the private practice of medicine or attempt to centralize certain features of medical practice at a state institution at the taxpayer's expense when many of such specialty procedures can be completed and cured in the patient's own home community for less than the costs of tranportation and hospitalization at the centralized institution. Why! Oh, why! Yes, this depression is a terrible calamity, but it has certain worthwhile virtues. The depression is making us seek the true value of many professional promotions much as the President is seeking to establish a monetary value that will last at least from one generation to the next.

Now, I propose a system of collective individualism as an answer to centralized institutional medical practice. If specialists are necessary to geographic sections of our country (called states or counties) it is easier to send one specialist to ten patients than to send ten patients to one specialist. You cannot accuse me of prejudice in this argument because I am a specialist. It seems rather anachronistic for a specialist to assume and attempt to discharge the responsibility of the general practitioner's argument, but having lived into that autumnal period of philosophical consideration I am inclined to pursue my arguments for individual enterprise and collective individualism in medicine until the cold days of my decline close in upon me.

Individual enterprise provokes a measure of competition but it is not a broad or high step to collective individualism. Any community is capable of developing and maintaining a system of collective individualism in medical practice; in fact it is an inevitable necessity as soon as transportation costs, political costs and taxation costs are forced out of sickness costs. There is the necessary pooling of individual professional ambitions in order to make ourselves and our clientele comfortable, healthy and happy and to prevent disaster, disease and distress.

With the passing of the pioneer, the individual no longer remains a law unto himself. He promptly indulges in collective individualism as soon as he finds it necessary to collect a group for protection from other than individual encounters with other men or forces of nature. Collective individualism does not demand communism or excessive centralization; it is not group practice. The legal profession has indulged itself with collective individualism and is familiar to us in the legal firms of both small and large cities. Court cases of unusual interest or legal importance can be argued in the locality in which they arise and legal consultants or specialists journey to the locality rather than transferring the legal contestants and witnesses to some larger centre. Just so with medical specialism or unusual ability; this could be better transported in the one person to a community at regular or required intervals rather than transporting the several patients to the one specialist. The emergencies of medicine are not nearly so often a matter of speed as they are of thoughtful anticipation.

You will note that this idea demands the acceptance and discharge of the rescponsibilities of preventive medicine by a larger percentage of practitioners than at the present moment. That they will engage themselves to this rather recent addition to curative medical practice is a foregone conclusion. Depression makes people and physicians think. If people and physicians will not think and act within a reasonable period, politicians and mental prigs will absorb the rights and privileges of individual thought. There are plenty of people ready to do your thinking for you if you give them a speck of a chance.

While insisting upon the increased responsibility of the profession in preventive medicine and modern additions to curative medicine, we are not balancing the responsibility of the people to meet the increased expense, this price of progress. Are we over-selling the people upon better medicine without showing the increased costs that it carries?

Any solution without socialism, communism or government paternalism demands a balancing of responsibility of the burden by public and physician. We want to seek a way out without a dissolution of individualism. Collective individualism offers a workable solution and serves to reduce the competitive annihilation by state medicine, taxation methods, or philanthropic displays by endowment. We are learning that we must be able to stand upon our own feet without dole, insurance, pensions, charity or communism, if we are to remain free men in America. We are realizing that there must be more cooperation and less competition if we are to survive and breathe the air of freedom. Collective individualism provides a practical working solution.

Preventive medicine, if accepted, applied, and continued by the people will relieve us of the increasing load of subnormal population. The physical degeneration of the race can be provoked if we continue too far in our sentimental ambitions toward subnormal groups of anatomical, mental or diathetic weaklings.

Shall we sacrifice the strong to the weaklings? You may remember that it was Goethe's fear that the world would turn into a vast hospital where the best energies of the strong would be taxed to care for the weak. The extent to which our religious zeal and sentimental relief for the weak and subnormal may be exercised may enter into arguments for the preservation and continuance of a strong people.

Recent events in an older continental nation have provided discussions upon the advisability of euthenasia (merciful death) for incurables and imbeciles because the funds and efforts expended to keep life in these alleged useless bodies is embarrassing the life of those able to care for themselves and the state. There is no doubt that civilization is being searched to its depths in these trying times all over the world. No thought is too deep, too grotesque or too bizarre but that it must be searched for a possible solution of the needs of the world and its individuals. We, the medical profession, are a part of the whole picture, and we must do our part in the revival and the survival of proper ways and means for life and livelihood.

THE CAUSAL RELATIONSHIP OF TRAUMA TO PARALYSIS AGITANS, FROM THE SURGEONS VIEWPOINT

H. C. MILLER, A. B., M. D., F. A. C. S.,
Omaha, Nebraska.

Though the diagnosis and treatment of paralysis agitans lies in the special fields of the internist and neurologist, it becomes increasingly interesting to the surgeon who has to do with traumatic surgery, especially the railroad and industrial surgeon. It is to be observed that with increasing frequency, suits are being filed in our courts against individuals and corporations in which it is alleged that trauma was the immediate and sole cause of the paralysis agitans suffered by the plaintiff.

Since anything that in any manner pertains to or results from trauma is of interest to the surgeon, a review was made of all the American and European publications on this disease written during the past ten years; the purpose being to discover what, if any, is the relationship between trauma and the disease, from the causal standpoint. The available publications of the old writers were reviewed for the purpose of comparison.

General conclusions as to etiology, pathology and pathogenesis will be made; the literature reviewed is too voluminous to permit of individual quotation, except in special cases.

Paralysis agitans is a chronic, progressive nervous disorder, characterized by tremor, muscular rigidity and weakness; affecting men more often than women and occuring most frequently between the ages of fifty and sixty.

The tremor is characteristic, appearing insidiously, usually after neuralgic pains. The beginning tremor is so slight as to be unnoticed by the patient and to be detectable only by use of an oscillometer that will register on three planes. Starting with the fingers and hand the tremor passes upward, becoming more pronounced. It may next attack the leg on the same side or it may cross to the opposite leg or arm. Remissions may occur, but it always recurs with the involvement of a greater area. The muscles of the neck, face and mouth become involved.

The muscular rigidity, affecting only the flexor muscles, varies from a slight rigidity in the beginning to strong contractions in the later stages.

The muscular weakness is of the extensors and becomes very pronounced.

The reflexes may be altered, but as a rule are normal.

The attitude and facies are, in the later stages, characteristic; the head is bent forward, the back bowed, the arms held away from the body with elbows flexed, the knees slightly flexed and held together. The face becomes immobile and expressionless, the eyes staring and the eyebrows raised; the so-called Parkinson's mask. (First described by James Parkinson 1725-1824, a pupil of John Hunter).

It will be noted by the observer that where very little is known of the cause of a disease an extensive list of causes are given. This was especially true of the old writings on paralysis agitans which gave grief, worry, mental shock, physical shock, alcoholism, exposure, overheating, chilling, overwork, sexual excess, trauma and heredity as well as a score of other things as the causes of this disease. In passing, may it be noted that it is in the publications of the old writers where the ambulance chasing attorney and his subsidized expert (?) witness find the most aid and comfort in proving to the jury that injury is the direct cause of paralysis agitans. Notable among these old writers, and most often quoted, is Jean Martin Charcot (1825-1892), a French surgeon who observed that a number of men whom he had treated for injuries of the arms and hands afterward developed paralysis agitans. He also noted that the tremor began in the injured member. These observations caused him to declare that peripheral trauma caused the disease and that the tremor always began in the previously injured member. Charcot's position as a leading surgeon gave great weight to his dictum. The general ignorance of neuro-pathology at that time and the fact that nearly every one affected could remember having had trauma in the affected member (few men reach the age of 50-60 without having suffered some trauma to hands and arms) caused Charcot's dictum to be accepted without question. Post hoc; ergo propter hoc (it followed; therefore it was caused by) was the method of medical reasoning in those days. Many of the recent texts still present the old writers ideas on this disease and include but little of the newer etiology and pathology.

The careful analysis of more than three thousand cases by recent writers leads, without a single dissention, to the conclusion that paralysis agitans is a degenerative disease of the central nervous system, affecting principally the corpus striatum, and is caused by a prolonged toxic irritation.

Barnes(1) obtained, by biopsy, specimens of affected muscles from 14 individuals that had paralysis agitans. By careful sectioning and examination he found progressive lesions of the neuro muscular bundles, degeneration of the intrafusal nerve fibres, vascular sclerosis and disintegration of the muscle fibres. In specimens from healthy individuals no such conditions were found. His conclusions were that the origin of the disease was not in the muscle itself, but that it was due to toxic substances of metabolic or glandular origin that had a selective affinity for the neuromuscular bundle and acted by chemical irritation. He felt that there was an additional central degeneration. It is to be regretted that he did not obtain specimens from the unaffected muscles from these same individuals for comparison.

In every case where the necropsy included the examination of the parathyroid glands, these glands were found to be atrophic and degenerated. Sajous(2), Berkely(3) and Jacobson(4) all comment upon this fact. Both Sajous and Berkely stress the fact that the removal of the parathyroids, regardless of age, will cause symptoms exactly similar to paralysis agitans or tetany. (Any surgeon who has had the misfortune to remove the parathyroids when doing a thyroidectomy will attest to this fact.) Both writers hold that the disease is primarily one of parathyroid degeneration with subsequent toxic degeneration of the nervous system. Berkely seems to ably substantiate his stand by the successful treatment of 60 to 70 per cent of his cases by administration parathyroid gland substance.

Heredity is accepted, generally, as a predisposing factor only. It is felt that there are families in which there is a familial weakness in certain parts of the nervous system which renders them especially susceptable to toxic degeneration. It is not believed that paralysis agitans is directly heritable.

As to the connection between trauma and paralysis agitans, Hyde(5) makes the following statement which is agreed to by the great majority of writers reviewed:

1. "Not a single case of traumatic genuine paralysis agitans has been described in literature. The old literature could not be used because the authors did not consider a pure causal relationship between the injury and the disease, but speak of it as a factor which favored the onset of the disease."

2. "A statistical compilation of a material of 1500 cases gave no basis for the assumption of a causitive relation between the injury and the disease. The data obtained from such material speaks against such relationship; even the numerical frequency of the disease in association with accidents in general speaks against such relation; excluding the cases where there was a definite possibility of the disease before the accident, there remain only 1/10 of 1% developing the disease. In a series of 683 cases of definite injury to the skull, of which 192 had permanent severe cranial injury, not one case developed paralysis agitans."

3. "Based on the concrete data obtained from our material there was found no basis for the assumption of a causative relation between peripheral trauma and the disease—in only two cases did the disease develop in the region previously traumatized."

4. "In only those cases that clearly proved that there was no previous symptoms and where there was a severe cranial injury with acute brain reaction and with immediate development of symptoms of paralysis agitans could a causative relationship be admitted; nor could this be accepted unless the disease occurred in a predominate number of such injuries. We never found an uncomplicated case of paralysis agitans following a cranial injury—it was always associated with other neurological and psychical disturbances."

Osler(6) advances the idea that the disease is a neurodegenerative disease, very similar to senile dementia, but causing an aging of the corpus striatum because of its greater susceptability.

Hensage(7) suggests that a degenerative transformation of the thyroid and parathyroids would lead to a premature degeneration or senility of the central nervous system; the basal ganglia, being supplied by a terminal artery that has few anastomoses, would be most susceptable to such senile transformation.

Sustaining the ideas of Sajous and Berkely, that the degeneration of the parathyroids results in the accumulation of toxic wastes in the body, with consequent deterioration, Gardinier(8) studying the neuro-vascular condition of 24 cases found, uniformly, a thickening of the vascular walls with perivascular increase of neuroglia and sclerosis with degeneration and atrophy of the nerve cells and fibres.

Surgical treatment of the disease seems to have been uniformly unsuccessful. Urachia(9) performed cervical sympathectomies on five cases, doing a perifemoral sympathectomy on one, and obtained only a transitory improvement of one week to one month, with a relapse to the preoperative status. This would seem to definitely eliminate the sympathetics from consideration as being concerned in the pathology of the disease.

CONCLUSIONS

Paralysis agitans being progressive, both in degree of severity and of area involved, necessarily must have an active and constant cause. Peripheral trauma, of any kind whatsoever, is definitely limited as time of action and as to area involved. Its effect cannot extend beyond the area of actual traumatic insult nor beyond the sharply defined time that lies between injury and healing. Therefore, the assumption that peripheral trauma is ever the cause of paralysis agitans is not only illogical but is an assumption of an impossibility.

If peripheral trauma were conceded a causal role in the production of this disease it would be reasonable to expect that the major number of those sustaining an injury to the hands, feet, arms and legs would develop the disease. The number who do so, compared to the total number who have suffered such trauma, is negligible. On the other hand, many individuals develop the disease who have never sustained either peripheral or central injury.

It is conceded that there is a remote possibility that cranial injury can cause the disease, but the central location of the corpus striatum makes injury to it without instant death a practical impossibility.

The apparent bridging of symptoms observed by some writers, between trauma and the disease may, it is believed, be explained; the individual has been developing the disease over a considerable time, gradually becoming more affected, but by the conscious or unconscious exercise of his will has been able to carry on with his accustomed occupation. (The writer has seen such cases). Some injury, possibly only a trivial thing, supervenes and with the relaxation of his determination the symptoms long held in abeyance, become apparent. If he was employed at the time of the accident, or if some responsible individual can be held accountable for his injury, he conveniently forgets his previous symptoms and attributes his condition entirely to the injury. Had the injury not supervened the progress of the disease would shortly have caused him to be completely disabled.

TREATMENT

Treatment, usually palliative and consisting of an enormous number of drugs and procedures, has been uniformly unsuccessful, though some few cures have been reported. Berkely, with his parathyroid treatment, has shown the most consistently good results. He prefers to use the parathyroids of the horse and stipulates that it must be freshly prepared and carefully tested.

Since paralysis agitans is a degenerative disease of the corpus striatum, the parathyroids and certain peripheral nerves, it seems reasonable to assume that it, in common with numerous other degenerative diseases to which the body is susceptable, is caused either by the failure to receive in sufficient quantity the nutrient chemicals and vitamines necessary to its metabolism or to the prolonged destructive irritation of some toxin, or both of them. The most constant source of degenerating and irritant toxins is focal infection. Therefore it is suggested that paralysis agitans, in the early stages before an extensive area has become involved, could be arrested or completely cured by proper diet and by the careful and complete eradication of all foci of infection.

BIBLIOGRAPHY

1. Barnes, M. B.: Arch. Neur. and Psy., 15: 407-443, April, 1926.
2. Sajous, C. de M.: Sajous Ana. Cly. Prac. Med., Vol. 8.
3. Berkely: Boston Med. and Surg. Jour., February 12, 1925.
4. Jacobson, V. C.: Albany Med. Annals, October, 1922, page 292.
5. Hyde, W.: Archiv. Fur Psychiatrie, 97:600-643, 1932.
6. Osler, Sir W.: Prin. and Prac. of Med.
7. Hensage, E.: Ztschr. fur d. ges. Neur. u. Psy., 110:795-800, 1927.
8. Gordinier: Sajous Ana. Cyclo., Vol. 9, page 583.
9. Urechia, C. I.: Rev. Neur., 33:620-623, 1926.

CARDIAC THERAPY*

FREDERICK NIEHAUS, M. D.,
Omaha, Nebraska.

The first reaction to a presentation of the subject of cardiac therapy is, that one is presumptious in attempting to discuss a subject which is so well standardized and understood by all. Frequently, cardiac therapy is considered completely covered by use of rest, sedatives and digitalis, and seemingly, recovery is adequately explained on the simple hydraulic basis of increasing the cardiac output.

However, a limited, practical experience soon disperses this idea. The critical work of some recent workers on the cardiac output and the minute blood flow cast doubt on the statement that a deficient circulation always means a decreased output. The effect of the diuretics in cardiac edema shows that a major problem lies distant from the failing organ. The excretory, metabolic and assimulatory functions are secondarily affected, so that the study of a cardiac disease involves a consideration of the normal and morbid physiology of the entire body. In no other illness is the expression, (which has been so oft repeated as to become trite) "that the patient rather than the disease must be treated," so applicable. Psychiatry is often of service as many cardiopaths also become neuropaths or even psychopaths. Emotions have been long associated with the heart, so that its diseases are probably more prone to upset the emotional equilibrium than any other physical ailment. The spectre of sudden death has been so closely associated with heart disease that this may also be a factor in creating the mental background of heart patients. This, as we all know, is not true, especially in the valvular diseases. And, regardless of these traditions, probably all of us are willing to admit that the consciousness of a defective heart must inflict a major psychic trauma.

Management of the cardiac truly permits the exercise of the art of medicine. The term, management, seems to best describe our aims. Practically no patients are cured, and the patient must accept life with a handicap. And yet, if this is properly presented by the physician and properly accepted by the patient, or, if the latter is so fortunate as to have a temperament to accept it, life may be useful and happy and, not infrequently, the span is not greatly shortened. The physician must inspire confidence, yet not instill ambition. He must consul caution, yet not blast hopes. In regard to activity; while rest is essential, activity should be encouraged to point of tolerance. Inertia is as much to be avoided as overexertion. An interest in life consistent with the physical capacity must be maintained.

---

*Read before the Omaha-Douglas County Medical Society, October 10, 1933.

While a cardiac cannot be successfully treated by hoodwinking or referring to his condition by an assumed name, yet an alarmist attitude is still worse. Over emphasizing a doubtful finding, or a finding which cannot be definitely identified as even a potential source of trouble, may cause more anxiety than heart disease. In other words, it is worse to inflict the diagnosis of cardiac disease on an individual, when it does not exist, than to miss an occasional case. There is hardly any subject in medicine which offers such an opportunity to teach medical students the art and science of medicine as the management of a cardiac.

Diet: The dietary regulations of heart disease are largely covered by the same rule as governs the whole life of a cardiac, viz., moderation. Heavy meals are one of their greatest stumbling blocks. Several factors, such as direct pressure of an overfilled stomach on the diaphram (or as some would have it by gastro-cardiac reflex action), the added circulatory demands of digestion, the specific dynamic action of proteins on the metabolism, either singly or in combination come into play.

An ordinary diet meeting the protein requirements (50 to 60 grams daily), supplying vitamines, minerals, sufficient carbohydrates and fats to maintain a fairly normal weight, is adequate. It is important that the total amount of food for the day be fairly evenly divided into three meals, or even five or six feedings. Emaciation and obesity should be corrected if possible. The latter should be given special attention as this makes useless cardiac demands.

In decompensation with portal and hepatic congestion, very simple diets of cereals, milk, citrus fruit juices, etc., are especially useful. Glucose added to them is beneficial in supplying an easily assimable source of energy.

Without getting further afield in generalities the subject will be restricted to a consideration of the recent trends in the use of therapeutic agents.

Digitalis: The use of massive doses is losing favor and advocated only in emergencies. Lewis recommends five drams as the usual digitalizing dose given over a period of four to seven days, depending on the emergency. White uses 0.1 gm. (1½ gr.) per ten pounds of body weight and 0.1 gm. (1½ gr.) additional for each additional day used to introduce this amount. After the digitalizing dose has been administered a maintenance dose, usually 1½ to 2 grs. daily, is continued indefinitely, even for years. The continual use of the drug is now accepted without much dispute. The writer saw a case of mitral stenosis grossly decompensated three times within one year. Since using daily doses of digitalis there has been no decompensation for three years.

In place of the initial massive doses of digitalis one or two doses of strophanthin may be used to advantage. This drug is used extensively in Germanic countries, but has never found favor in America. A more reliable preparation is now available and should be used more frequently.

The "Wonder of Digitalis" action is still witnessed at its best in cardiac decompensation with rapid irregular heart action as described by Withering. Some authors, more frequently the English than American, suggest this as the only worthwhile action. However, with few exceptions, it is used in all types of congestive failure. Christian recently still further extended its use to all enlarged hearts whether they have been decompensated or not. He concludes that cardiac enlargement is a handicap, and, to prevent further enlargement, stays off the day of cardiac failure. Cloetta showed in experimental aortic regurgitation that the extent of cardiac enlargement could be diminished by prophylactic use of digitalis.

In fibrillation with any signs of heart failure, digitalis is the drug of choice. If it does not establish normal rhythm, the rate is sufficiently reduced to permit efficient heart action. In this condition its use is more extended, while the use of quinindine is more restricted.

The contraindications of digitalis are receiving less and less concern. Decompensation with bradycardia, heart block and hypertension as contraindications, are no longer valid. It is interesting that Corrigan advised against its use in aortic regurgitation because it slowed the pulse rate. His contention was, that there was less time for blood to regurgitate with a rapid than with a slow rate.

Hyperthyroidism with decompensation has been mentioned as a contraindication. A few authors now advocate larger doses than when the thyroid function is normal. Vomiting is always difficult to evaluate as it is a symptom of decompensation as well as over-digitalization. If present before use of the drug, obviously the course is clear. Digitalis must be pushed, usually resorting to the rectal or the intravenous use. After full dosage the vomiting is usually relieved. Except in the rare instances of idiocyncracy, this symptom is usually due to under than over-digitalization. Lewis states that digitalis rarely causes vomiting before five drams of the tincture has been given. He regards a patient digitalized, regardless of dosage, when the heart rate has dropped to 60-70, and, the proper maintenance that which holds the pulse between 70-90. The latter will not prevent rapid rises with effort. He does not fear the cumulative action unless the pulse is below 50.

Pulsus bigeminus and extra systoles, not present before the use of digitalis, cannot be disregarded. In general, the signs of intoxication of this drug have been over-emphasized, and the signs thought to be due to it, are more often the signs of under dosage. Wenkebach's attitude is expressed in the following: "If I ever achieve the successful treatment of heart patients, it will be because I gave digitalis when it was forbidden by the authorities and textbooks." Christian and White in a similar vein, state that, "When there is need for digitalis it is proportionately more effective and when the need decreases the same dose is less effective." At times, in patients presenting a favorable response to digitalis, such as disappearance of edema, decrease in size of liver, etc., the dyspnoea suddenly becomes much worse. It seems paradoxical that the drug is working too efficiently, but, by more effective right heart action the pulmonary fields become more congested. This is most frequent in mitral lesions and especially in mitral stenosis. Obviously, this is the reverse of the decrease of dyspnoea with the advent of a tricuspid insufficiency. The dose of digitalis must then be adjusted to prevent too efficient right heart action.

In coronary artery disease clinical experience and laboratory data agree that digitalis should not be used in uncomplicated cases. Gilbert and Fenn showed that digitalis caused a vaso-constriction and decreased coronary flow experimentally. This corroborates the clinical observation that it may cause anginal pain in some individuals. This is not an infrequent occurrence. McKenzie described a sense of oppression in the chest which he regarded as a sign of over-dosage. The case against digitalis in angina pectoris is almost sufficiently clear to amount to a contraindication. Likewise, in coronary thrombosis its use is ill advised. In the early stages of infarction a circulation at low ebb is desirable. Vigorous heart action may rupture the heart wall. Vaso-constriction may extend the area of the occluded vessel. Complications may arise in either angina pectoris and coronary thrombosis which may demand its use. If a rapid fibrillation or a congestive heart failure complicate the picture, both of which are not uncommon, especially in coronary thrombosis, digitalis must be used regardless of contraindications to its use in the uncomplicated cases.

The indications for the use of digitalis are sufficiently clear to deprecate its indiscriminate use. Its use in cases whose only evidence of heart disease being a murmur, belong to a past generation. There are even cases today, in spite of our diagnostic armamentarium, which we find difficult to definitely state whether or not they should be classes as cardiac. This class should be subjected to a period of observation before using it. If we restrict its use to fibrillation and congestive heart failure we will use the drug less. Stewart showed a decreased cardiac output in normal hearts which lasted for two to five days after digitalization. Apparently a normal heart can be embarrassed by its use. Regarding its effect in such conditions as pneumonia divergent opinions are expressed. The tendency is distinctly away from its routine use. Some even regard it as dangerous. At least one no longer needs to use it for fear of censure.

Purine Derivatives: (Theobromine, theophyllin and their derivatives.) Breur, in 1902, made the statement that he regarded theobromine as the most noteworthy therapeutic achievement in ten years in the treatment of cardiac asthma and angina pectoris. Since then, this and other similar derivatives have maintained considerable popularity in Europe, but, in America their use has been limited until recently. The work of Smith, showing their effect in increasing coronary flow, and others demonstrating vaso-dilating effect, has re-established their value in cardiac therapy.

Gilbert and Kerr rank them according to vasodilating effect: (1) Theobromine and its salts, (2) Euphyllin, (3) Theophyllin and its salts, (4) Caffine. Their chief effect as a cardiant is in angina pectoris and the healing stage of coronary thrombosis. In congestive failure they are useful if it seems advisable to discontinue digitalis. Crummer adhered to the alternate use of digitalis and theobromine sodium salicylate for four day intervals. The diuretic effects of these salts will be considered with the other diuretics.

Diuretics: Diuresis as a means of cardiac therapy has received much attention recently. The therapeutic agents act in two ways, (1) by altering the reaction of the body fluids, (2) by direct action on the kidneys.

(1) The acid salts, by shifting the acid base equilibrium to the acid side, produce a diuresis. Ammonium chloride or nitrate are usually used. Calcium chloride is preferred by some. Barker advocated the use of potassium chloride. These may produce renal insufficiency — a condition which bears watching in any diuretic regime. In using ammonium nitrate the blood chlorides are decreased and may fall below the effective diuretic level. The acid chlorides raise the blood chlorides and cause a swing to the acid side, both of which cause a diuresis. Engle and Epstein state that ammonium bromide acts as an acid salt.

(2) The mercury diuretics act by decreasing tubular re-absorption. Salyrgan has many advantages over novasurol and is now used almost exclusively. However, the latter works at times when the former fails. Their effectiveness is definitely established. Their use, in conjunction with the acid salts, enhances the effect of both. The purine diuretics act by increasing the glomerular output. This function is much less effectively influenced than the inhibition of tubular re-absorption by the mercury diuretics. Novurite, a combination of euphyllin and salrygan, therefore, should offer the advantage of both the mercury and the purine diuretics. At times larger doses, 2 to 4 cc., of salyrgan are necessary to be effective. It has been noted that stomatitis, diarrhoea and other complications, are more apt to occur if hepatic disease is present. A tense ascites, by pressure on the kidneys, may prevent a proper response. Therefore, paracentesis should precede their use.

Obviously, rest and digitalization should precede the use of diuretics, as the release of peripheral fluid in edema by these may flood the vascular system and add to the cardiac load.

Quinidine: This drug has been restricted to a limited field. Lewis regards it as a remedy that should not be administered often. Aside from fibrillation it is not used, and, even in this condition, its indications are sharply limited to those cases in which an irregular heart action is distressing, without evidence of serious cardiac damage. It acts most favorably during the first month after onset. In congestive heart failure it is sometimes used after this condition has yielded to digitalization and other therapy.

Simultaneous use of digitalis and quinidine has been used in the hope that irregular heart action would be better controlled. Recently evidence has been submitted that toxic symptoms are liable to appear. It does not seem advisable to use full doses of both. Recently, the writer was convinced that a case of paroxysmal fibrillation was more promptly controlled with smaller dosage of quinidine after the patient had been digitalized and was on a maintenace dose. Ventricular fibrillation is a complication which demands prompt use of quinidine, at times intravenously. This may arise after coronary thrombosis, and, for this reason, a small dose of it is given routinely for about two weeks after the onset by some workers. The fibrillation due to hyperthyroidism constitutes one of its most important uses. Besides being the best drug to control heart rhythm in this condition it has some influence in depressing thyroid overactivity. Postoperatively, if thyroidectomy has not re-established normal rhythm, it should be started early, on the second or third postoperative day.

Nitrites: These medicants are obviously useful only in coronary disease due to their vasodilating effect. It has been established that they increase the coronary flow. Lewis and others attribute to this the effect in relieving the temporary ischemia of angina pectoris, and not due to the lowering of the blood pressure. He observed instances in which the pain was relieved before the blood pressure fell. The pain of coronary thrombosis is usually not influenced by the nitrites. Prodger and Aynan advise against its use in this condition as they were convinced that the area of infarction might be extended. White advises using 1/200 gr. of nitroglycerine as a larger dose may cause fainting. He suggests giving it before effort to avoid attacks. Fitzhugh would give it only when conditions arise which cannot be controlled and advises against its use to permit greater activity.

Oxygen therapy—relieves the pain of coronary thrombosis and may perhaps decrease the extent of necrosis in infarction.

Glucose: The use of this substance, either by mouth or intravenously, has been advocated on the theory that the glycogen of the myocardium is depleted during cardiac disease. Fitzhugh advised using it with small doses of insulin, especially in coronary thrombosis. However, many authors advise great caution in the use of insulin in diabetics with coronary thrombosis. This substance, in reacting or near reacting doses, certainly provides circulatory conditions favoring thrombosis in atheromatous vessels. Good authority recommends against its use in diabetics with coronary thrombosis as the circulatory status is such as easily to be further shocked. Some even suggest that a hyperglycemia would be beneficial to the damaged heart. Furthermore, most diabetics in the coronary thrombotic age are usually not acutely susceptible to acidosis or in urgent need of desugarization. Obviously, if acidosis exists it cannot be ignored, but, at least, caution in dosage is advisable.

Tissue Extracts: Reference is occasionally made to these substances especially in the French literature. Des Champs submits enthusiastic reports. Among these are pancreatic extracts and "nucleoside." Their action is supposedly due to their vasodilating effects, particularly on the coronary arteries. The active substances are split proteins, such as adenin nucleotides, etc. My experience in a few cases is not convincing. One complained of dizziness. The most satisfactory result was reported to me by a physician who stated that he had derived more benefit from it than from any other drug in the control of an angina pectoris.

Sedatives: Heart disease cannot be treated without a sufficient dose of morphine. Nothing else will relieve the respiratory distress. Barbiturates and bromides are useful, but usually not adequate.

A REVIEW OF DIGITALIS THERAPY

MAINE C. ANDERSEN, M. D.,
Omaha, Nebraska.

Digitalis is one of those rare therapeutic agents in medicine the action of which continues to fascinate and to baffle the physician who is attempting to treat intelligently his patients with heart and circulatory disease. Withering, who introduced digitalis into medicine in 1785, knew nothing about the manner or method of the action of digitalis but based its use purely on empirical reasons—the diuretic effects of the drug and the disappearance of dropsy. Later investigators studied the effects of digitalis and its allies on animals. These studies served as a basis for the analysis of the effects observed in man and made possible a fair degree of scientific accuracy in regard to its therapeutic use. The study of the effects of digitalis on man by exact clinical methods was inaugurated by Mackenzie.

Pharmacological studies, though in a widely different species, serve as a basis for the clinical use of drugs. The clinical effects do not always sufficiently parallel those obtained in experimental animals to incite over-enthusiasm. Many of the clinical results obtained from the administration of digitalis to patients with heart or circulatory disease are brilliant and satisfying. Again, the results may be very disappointing and different from those which the clinician expected; either because of his failure to appreciate the pharmacological action of the drug, that is, its possibilities and its limitations; or, because of some individual idiosyncrasy in the patient to whom the drug is administered; or, finally because of a fault in the potency of the drug which is used.

The active principles of digitalis are glucosides. Christian(1) states that after the ingestion of digitalis, these glucosides pass from the circulating blood in the cardiac cavities and the coronary vessels into the cells or fibers of the myocardium where they become fixed and are gradually split into two components, one an aglykon or genin, which exerts the digitalis action, and the other a sugar, which is inert. This splitting is a gradual process continued with diminishing amount of available active digitalis substance over a long period of time. The amount of digitalis fixed by the heart muscle is proportionate to the concentration, the time of flow remaining the same, whereas the fixation varies inversely with the shortening of time of flow, the concentration remaining unchanged. Digitalis fixation also varies directly with the increase in the mass of heart muscle.

Experimentally digitalis and its allies have a twofold action on the heart of the healthy mammal: first, through the stimulation of the cardioinhibitory centre in the medulla oblongata; and second, by direct action of the drug on the heart muscle. By making graphic tracings of pulse, intraventricular, and intra-auricular pressures of a dog whose heart has been exposed in situ, we are not only able to record changes in pressures, rate, and rhythm, but also to observe the gross reaction of the heart in its response to increasing doses of digitalis. An experiment of this type shows that there is a rather definite sequence of events in the action of digitalis on the mammalian heart.

Christian(1) states that after the digitalis enters the heart muscle for a brief time it can be removed easily; at the end of this brief period it has become fixed in the heart muscle and by no known means can be removed. So far this digitalis has had no demonstrable effect on the heart muscle. Gradually, however, this digitalis —bound to the heart muscle—is converted into aglykon which exerts the digitalis action.

There is an increased strength of ventricular contraction. The ventricles contract to a smaller size and the relaxation during diastole is greater as evidenced graphically by the increase in the height and depth of the ventricular stroke. With the decrease in the heart rate there is a lengthening of the diastolic period which would allow time for greater relaxation and better filling of the ventricle. The stroke volume is increased and there is an increase in the general blood pressure.

The increased strength of ventricular contraction is in the nature of contracture. Cushny's observations would indicate that the shrinkage of the ventricle in contracture is due to some change in the muscle which shortens the fibers without significantly changing their elasticity. Contracture has nothing in common with the normal contraction, for during complete contracture there is no indication of any change in the electrical condition such as is seen in active contraction of the ventricle in normal systole. Again, contracture may be an increase or exaggeration of the muscle "tone". The increase in degree of ventricular contraction, following the administration of digitalis, is not influenced by atropine showing that the effect is due to a direct action of the drug on the heart muscle. Cushny has shown that the increase in the degree of systolic shortening is also accompanied by a quickening of the speed of the contraction.

In the early stage of digitalis action the excitability of the ventricle is greater than before, but with the increase in the degree of action it is soon found that an electric shock which is sufficient to cause a contraction in the normal heart fails to cause a response. That is, there is a reduction in the electrical excitability of the ventricle. However, there is an increasing tendency to the development of spontaneous ventricular extrasystoles.

There is a gradual slowing of the dog's heart rate due to the increased activity of the cardio-inhibitory mechanism on the sino-auricular node —the pace-maker of the heart. The slowing does not occur subsequent to the administration of atropine showing that the change in rhythm is not due to direct action of the drug on the pace-maker but of central influence. The increased activity of the inhibitory mechanism incurred by digitalis also results in a lengthening of the pause between the contraction of the auricles and that of the ventricles. There is a prolongation of the A-V interval. Under normal conditions with the administration of digitalis this reduction in the conductivity does not occur subsequent to the administration of atropine. However, when the heart is greatly accelerated and the conduction fibers are put under strain, digitalis retards the passage of impulses from the auricle to the ventricle in animals under atropine. It is apparent that digitalis, under certain recognized conditions, has a direct action upon the conduction fibers as well as the indirect action through the stimulation of the cardio-inhibitory centre.

As the dose of digitalis is increased, the pause between the contraction of the auricle and that of the ventricle becomes of greater and greater duration until finally the impulses from the auricles come through the auriculo-ventricular node very slowly or entirely fail to pass through and the ventricle initiates an automatic rhythm of its own; that is, there is complete atrio-ventricular dissociation. Cushney believes that the diminished conduction, due to large doses of digitalis which often leads to complete block, is not inhibitory in origin but arises from the direct action of the drug upon the conduction fibers. Atrio-ventricular dissociation is a toxic manifestation of the action of large doses of digitalis on the dog's heart and is followed by toxic rhythms: auricular fibrillation, ventricular tachycardia, ventricular fibrillation, and death of the animal.

Dock and Tainter(2) found a rise in the arterial pressure and a fall in the venous pressure of normal dogs following full therapeutic doses of digitalis. With the fall in venous pressure there was a diminution in cardiac output, which was progressive with the progressive fall in venous pressure and heart volume. They also found a constriction of the vessels of the skin and intestine, and an increase in volume of liver and spleen, due to hepatic vein constriction and to a pooling of blood in these viscera. These changes must have resulted in the diminished venous return to the heart and a diminished output and heart size. Harrison and Leonard(7) have also shown that soon after the administration of digitalis to dogs the volume output of the heart per minute diminishes. Cohn and Stewart(8), following the administration of digitalis in normal dogs, found the size of the heart decreased, the height of the ventricular excursions increased, and the cardiac output decreased. After the first twenty-four hours the cardiac output often became greater than the initial value. They analyse this increase in the cardiac output as due to a two fold action of digitalis. With the increased cardiac tone there is a decrease in the size of the heart, from which issues a decrease in cardiac output. The increased ventricular contraction tends to increase the cardiac output. They conclude that if cardiac size is not smaller than a critical value, increase in ventricular contraction overbalances decrease in size so that cardiac output increases beyond that initial value.

The most important effect of digitalis in heart disease is the reduction of the accelerated cardiac rate but this effect occurs in a striking manner only in cases of auricular fibrillation and auricular flutter. There are numerous observations to show that the amount of digitalis which is necessary to stimulate the cardio-inhibitory centre sufficiently to cause slowing of the normally beating heart is usually greater than the amount that can be given to patients without the production of toxic symptoms. Children, whose vagus centre is more easily stimulated than usual or whose heart is more susceptible to the slowing action of the vagi, are exceptions to this rule. The important part in the therapeutic action of the drug is the depression of the conduction of the cardiac impulses between the auricles and the ventricles through its action of the cardio-inhibitory centre. The depression of conduction in auricular fibrillation or auricular flutter prevents the improper stimulation of the ventricles by the auricles and allows a longer period to elapse between auricular and ventricular systole. The slowing of the ventricular rate in auricular fibrillation would allow more complete ventriclar filling during diastole. Aside from any direct action of digitalis upon the ventricular musculature, the more optimal ventricular rate, making for the economy of cardiac reserve and an increase in the ventricular filling, would tend to enhance the general circulation. Nor would it be presumptuous to anticipate a corresponding improvement in the coronary circulation. The clinical improvement of patients following full digitalization has, beyond a shadow of a doubt, proven the efficacy of the drug in cases of auricular fibrillation with a rapid ventricular rate.

Clinically there are suffiicent evidences to show that digitalis in therapeutic amounts has a beneficial effect on the functions of the myocardium in certain types of heart disease in the presence of normal sinus rhythm. It is generally considered that the favorable results following the administration of digitalis to patients with heart disease are due to an increase in the output of the heart as a result of an increase in the tone and an increase in the ventricular contraction. The conditions under which the experimental facts of increase in tone and of ventricular contraction following the administration of digitalis to animals have been adduced are not necessarily applicable to the clinical therapeutic actions of the drug.

Burwell, Neighbors, and Regen(3) observed a decrease in the output of the heart per minute following the administration of digitalis to a group of subjects whose cardiac output was already as low as rest, fasting, and training could bring it. Weiss and Ellis(4) found no significant changes in the cardiac output, the velocity of blood flow, the circulating blood volume or the vital capacity of the lungs following the administration of digitalis to four patients with rheumatic heart disease and regular sinus rhythm. However, all the four patients showed clinical improvement. Kininmonth(5) found that the circulation rate may be increased, decreased, or unaffected by digitalis, different effects occurring not only in different patients but also in the same patient at different times. An increase seemed to occur usually but not invariably when there were signs of cardiac insufficiency and a slow circulation rate.

Cohn and Stewart(6), by using the moving x-ray film, found a significant increase in the height of the left ventricular excursion when the patients studied were under the influence of digitalis. The height of the excursion decreased as the effect of the drug wore off. As a rule no decrease in the size of the heart took place. Weiss and Blumgart found an increase in the velocity of the blood flow in the pulmonary circuit following the administration of strophanthin and tincture of digitalis in large therapeutic doses to patients suffering from cardio-vascular disease. Obviously we have, as yet, found no certain means of measuring the direct influence of the drug on the efficiency of the myocardium in heart disease nor are we able to sharply differentiate the various factors entering into the therapeutic action of the drug.

Roentgen studies have shown that the heart dilates in pneumonia. Levy(7) demonstrated that digitalis prevents or diminishes cardiac dilatation in pneumonia. Wyckoff, Du Bois, and Woodruff(8), in a series of 835 cases, found no evidence that routine digitalis therapy in lobar pneumonia resulted in a lowered mortality. Except for the lowering of rate in patients who had developed auricular fibrillation, there were practically no signs of digitalis effects other than changes in the electrocardiogram and toxic effects. There was a definite increase in the mortality of patients who received large doses of digitalis without showing the usual clinical symptoms of early or late digitalis toxemia. They suggest that because of the effects of pneumonia toxin digitalis may produce death not infrequently without any warning signs of usual clinical manifestations of mild or profound toxicity. Burrage and White(9) found in a series of 221 cases of lobar pneumonia that those who received digitalis showed a mortality rate two and a half times that of those who received none. The digitalized patients showed a mortality only five-eighths as high as those who were given no digitalis while those receiving non-digitalizing doses showed a mortality three and a half times as high as those without any digitalis. The lowest percentage of mortality was found in those patients who were fully digitalized and next in those who received no digitalis. Certainly, the routine giving of digitalis to patients with pneumonia, in the absence of existing auricular fibrillation, is dangerous. Nor has it been clearly shown that cardiac weakness plays an important role in the mortality rate of pneumonia.

Marvin(10) found that the administration of digitalis in suitable large doses under properly controlled conditions to patients with advanced congestive heart failure, regular rhythm, and considerable oedema, appeared to cause improvement consistently in only one group; the group he designated "Arteriosclerotic heart disease." The drug was found occasionally beneficial in patients with syphilitic heart disease, but almost devoid of effects in rheumatic heart disease. Luten(11) found that favorable effects occurred with most consistency following large doses of tincture of digitalis by mouth in patients with normal sinus rhythm belonging to the class known as "myocardial insufficiency." The improvement did not depend upon a change in ventricular rate. He also found that the patients with myocardial insufficiency and normal sinus rhythm improved under proper digitalis administration in about the same proportion of cases as the patients with auricular fibrillation.

Christian believes that cardiac hypertrophy, instead of being a beneficent process, is an injurious influence on cardiac function, that the heart, once enlarged, is already on its way to essential decompensation and to retard hypertrophy is to prolong cardiac efficiency. He suggests that moderate daily doses of digitalis will retard cardiac enlargement and delay the appearance of symptoms and signs of cardiac insufficiency especially in individuals with hypertension or in elderly people with or without evidence of cardiac enlargement but in whom circulatory efficiency is lessening due to a dehydration of the heart muscle.

Kellum(12) found that the diuretic effect of digitalis in cases of cardiac failure with oedema is uncertain; such effect may be marked, slight, or absent and suggests that in the treatment of congestive heart failure and oedema digitalis be employed for its beneficial cardiac effect, and that other substances be also employed for their superior and more certain diuretic action.

CONCLUSION

What was at one time established as a sovereign procedure may appear to the eyes of a later day as extremely problematical, if not dangerous. We are still unable to bridge the "gap" between our experimental evidences of digitalis action and the results obtained by clinical observations. Digitalis does not sufficiently effect the normal sinus rhythm to warrant the administration of the drug to reduce the accelerated heart rate, per se, except in the presence of auricular fibrillation and auricular flutter.

In view of the many excellent observations, it becomes very problematical that digitalis has any consistant effect upon the cardiac output. Dock's and Tainter's observations on the fall in the venous pressure of normal dogs would suggest that there are a number of other mechanisms through which digitalis, even with unchanged cardiac output, may improve the circulation.

It is very obvious that the nature of the action of digitalis in heart disease cannot be sharply defined. Yet, that the drug has a beneficial effect upon the failing myocardium in certain types of heart disease and in the presence of a normal sinus rhythm has been definitely established by clinical observation. Digitalis in moderate dosage has a "tonic" effect upon the heart muscle and may, as Christian believes, help to inhibit cardiac hypertrophy and retard some of the aging process of the myocardium.

Certainly there is sufficient data to discourage the routine administration of digitalis in pneumonia in the absence of auricular fibrillation or auricular flutter. The cardiac dilatation in pneumonia may be a compensatory phenomemum and an entirely unimportant factor in pneumonia mortality rate.

BIBLIOGRAPHY

1. Christian, Henry A.: Pharmocology of Digitalis in Relation to Therapy of Heart Disease, New Eng. Jour. of Med., 208, 66, 1933.

2. Dock, W., and Tainter, M. L.: The Circulatory Changes After Full Therapeutic Doses of Digitalis, With a Critical Discussion of Views on Cardiac Output, Jour. Clin. Invest., 8, 467, 1930.

3. Burwell, C. S., Neighbors, D., and Regan, E. M.: The Effect of Digitalis Upon the Output of the Heart in Normal Man, Jour. Clin. Invest., 5, 125, 1927.

4. Weiss, Soma and Ellis, Laurence B.: Circulatory Measurements in Patients With Heart Disease Before and After the Administration of Digitalis, Jour. Clin. Invest., 8, 435, 1930.

5. Kininmonth, J. G.: The Circulation Rate in Some Pathological States, With Observations on the Effect of Digitalis, Quart. Jour. Med., 21, 277, 1928.

6. Cohn, A. E. and Stewart, H. J.: Evidence That Digitalis Influences Contraction of the Heart in Man, Jour. Clin. Invest., I., 97, 1924.

7. Levy, R. L.: The Size of the Heart in Pneumonia. A Telroentgenographic Study With Observations on the Effect of Digitalis Therapy, Arch. Int. Med., 32, 359, 1923.

8. Wyckoff, John, Duboise, Eugene F., and Woodruff, Ogden: The Therapeutic Value of Digitalis in Pneumonia, Jour. A. M. A., 95, 1243, 1930.

9. Burrage, Walter S., and White, Paul P.: Digitalis in Pneumonia, Am. Jour. Med. Sc., 194, 260, 1927.

10. Marvin, H. M.: Digitalis and Diuretics in Heart Failure With Regular Rhythm, With Especial Reference to the Importance of Etiologic Classification of Heart Disease, Jour. Clin. Invest., 3, 521, 1927.

11. Luten, D.: Clinical Studies of Digitalis. Effects Produced by the Administration of Massive Dosage to Patients With Normal Mechanism, Arch. Int. Med., 33, 251, 1924.

12. Kellum, E. LeRoy: The Diuretic Effect of Digitalis, Am. Heart Jour., 8, 342, 1932.

SEXUAL NEUROSES AS PROBLEMS IN GENERAL PRACTICE*

A. L. COOPER, B. Sc., M. D.,
Scottsbluff, Nebraska

The general practitioner of medicine is in a position to come into closer contact with all the diversities of physical and mental misfortune that beset his fellow than is the specialist. He has the enviable opportunity, if he so elects, to gain an intimate knowledge of any and all problems, real or imaginary, which confront his patients. His is a task supreme, and no less important because of his inability to be thorough in all branches of medicine. He cannot be a universal specialist, nor need he be. However, if he is to hold the greatest respect of his patients and be able to give them the real service this respect deserves, he must be conversant with the whole field of human ailments and be a competent diagnostitian. If he is this first, he need not hesitate to turn to the specialist for further aid when needed. Insofar as he is able to get at least a working knowledge of the real trouble, he will be able to bring whatever relief is possible to his patients, and earn their appreciation.

When the general practitioner neglects any branch of medicine, or is unable to at least direct his patients where they may seek relief, he in like measure fails to hold his honored place in the eyes of the public and leaves the bars down to the cultist or quack, to displace him with some therapeutic fad; this with injury to both the public and the profession.

With this thought in mind, I have selected the topic of Sexual Neuroses for a brief discussion. Disorders of this class are very evidently overlooked or neglected by the average physician. They are neglected perhaps, largely, because of the difficulty of getting definite and accurate information from the patient, or they are often looked upon as specialized subjects for the neurologist or genito-urinary specialists. A persual of the usual medical literature, shows a dearth of information and rarely refers to sexual neuroses as medical entities.

None of us, however, can deny the fact that many patients come to us with many vague symptom complexes, which lead us nowhere and, which on hunting for physical evidences for their presence, we find little or no organic basis for their existence. The excuses that nervous dispositions, constitutional tendencies, unstable nervous systems, etc., have given rise to exaggerations of slight organic troubles, and made a neurotic patient, is a poor diagnosis, as a basis of therapy, and is equally unsatisfactory as an explanation to the patient. To get at the primary and secondary causes it is necessary at times to investigate a field, which even the patient seldom suspects as being the big factor in their difficulty. We might name this field, the genetic urges.

The patient confronts us as an organic unit—an offshoot of the genetic stock—an individual of one sex or the other, with all the possibilities which their complete mechanism presents for normal functioning, or organic derangement. We are too apt to forget that back of this unit organism, stands the whole genetic race, with all of its biologic urges and instincts, which act constantly to shape the thoughts, desires and actions of the individual, normally or otherwise.

---

*Read before the West Nebraska Clinical Assembly, North Platte, November 6, 1933.

The difficulties which these genetic forces encounter in their normal expressions under modern civilization are many, and extend from early childhood to old age. The group of disorders which more properly come under sexual neuroses are more nearly the results of these difficulties, or obstacles to normal sexual expression. So strong are these biological urges, that expression asserts itself, even under the most unfortunate circumstances. Deranged psychic and physiologic conditions develop as the net result. Organic disease is seldom the active cause of neurological entities of a sexual nature, but rather, abnormal sexual physiology often results in minor organic changes which markedly influence the development of sexual neuroses.

In this brief discussion, I will only mention a few of the neurological entities grouped under the heading Sexual Neuroses. These can easily be found in many exhaustive works on the subject—well systematized and catalogued for study, and in a general way, at least, these are known to all of you—masturbation, impotence (functional and psychic), pollutions, priapism, satyriasis, nymphomania, frigidity, vaginismis, dyspareunia, the effects of withdrawal, of incomplete intercourse, abnormal continence, etc. These are the more important subdivisions, and time will not permit our consideration of these individually, as such. I wish rather, to consider some of the factors which lead to these types of disorders, and the physician's place in uncovering their existance, and what he can and should do, therapeutically.

The impressions and conclusions which I hope to leave with you have been gained from the sources of medical literature in part and in part from a systematic attempt at thorough work on the cases of sexual disturbances that have presented among my patients during the years of practice. A few fortunate observations during my school and early practice lent interest to the subject which has continued and has presented new problems in diagnosis and therapy. Many have been left unsolved, and no doubt, many others have gone unrecognized. However, out of it all, there have been many patients whose individual probelms have been, apparently, successfully analyzed, and satisfactorily managed therapeutically, with recoveries, or restorations to normal conditions. This has occurred with enough success to win the sincere gratitude always felt by a patient for whom a vital service has been rendered. Many of my most loyal patients through the years have been past problems of this nature.

These facts lead to conclusion number one: That the sex life of most individuals of both sexes has a most profound influence upon their whole existence, and that a rational management of its many problems is of enough importance to warrant the sincere efforts of any physician to whom they are presented.

Conclusion number two: Primitive sexual instincts, when allowed unhampered expression, do not result in neuroses, though many organic troubles of serious nature are thus often engendered. This needs only a brief explanation. Ignorance of sexual matters among either unintelligent or intelligent individuals leaves them with little to do but follow their natural impulses, except as hindered or altered by extraneous obstacles of customs, laws and circumstances of organized society. They do not develop neuroses, but do fall heir to a lot of infection resulting in greater or less damage to their genito-urinary systems, and produce organic disease. They may be physically miserable, but usually free from psychic and neurotic disturbances. The evidences of this in any physician's practice, naturally lends the impression that sexual neuroses are comparatively rare occurrences.

Conclusion number three: Misinformation among individuals of any grade of intelligence, and resulting disfunctions sexually, lay the foundations for most of the typical examples of sexual neuroses. This conclusion needs amplification and the citation of examples to substantiate its truth.

First, in explaination of this last conclusion, let us mention some facts, self evident to the physician, but often little understood by the laity and yet about which the average layman, male or female, has an abundance of misinformation. From infancy on, the growing child is subject to abnormal suppressions of normal sexual expressions by the taboos passed on to it by the average misinformed parent or older child associate, until at adolescence, the average child's accumulations of sexual knowledge and impressions little fit him for the rational understanding of the new events in physical developments and psychic changes which crowd rapidly onto youth and early manhood and womanhood. Consequently, their conduct is too often the result merely of a system of "thou shalt nots", rather than of intelligent understanding. Their store of misconceptions prevents a normal expression of their sexual propensities. Worse than ignorant, they are confronted with natural impulses, which are in immediate conflict with instilled ideas. Psychic traumas are the natural result, and sexual expression is released in abnormal ways. This abnormal function in the presence of psychic trauma, both the result of misinformation, lay the foundation for sexual neuroses.

We need not spend time in detailing how this comes about. A few case histories will suffice to illustrate.

Mr. X, a man of 40, came to me with a lot of vague, neurotic symptoms which at first simulated a depressed, manic depressive psychosis, of mild degree, and had been so diagnosed by a neurologist. But after many months of treatment no changes had occurred. An attempt at psyco-analysis on our part, resulted in bringing up the following: When a boy of fifteen, his father caught him masturbating and promptly whipped him for it and told him he would go insane if he ever did it again. He rarely masturbated again, largely because of this instilled fear. He married at 25, a woman who proved to be frigid, and his ideals and dreams of youth ended in sexual disappointment. Early religious training kept him in the straights of marital union, in spite of a very strong libido. His wife's frigidity was engendered by a determination not to have more than two pregnancies. Withdrawal was practiced. Re-education of both parties in normal sexual practices and some local treatment for his congested seminal vesicles and prostate, cleared up his neurosis in a few months and also partially overcame the wife's frigidity.

Mrs. W., a woman of 34, whom I had known for several years as an underweight, easily exhausted individual, with little organic exidence to account for the condition, came to my office one day, and in much aggitation said, "Well, we have gone and done it. Fred and I have busted up. I have done my best, but I couldn't hold him. It's another woman." I knew Fred to be a husky, hard-working farmer, of sterling quality, and though financially cramped, had with his good wife, reared four fine children, the youngest of which I had delivered seven years before. After thoroughly questioning her, these facts came to light: Beginning back after the last pregnancy they had decided she should not have any more children. Information from lay friends led them into abnormal intercourse, of several kinds, with a pregnancy resulting in a year. A trip to Denver, and an advertising quack, fixed that, and a resulting infection apparently prevented further pregnancies. Since then, although their relations were normal in kind, they became more and more frequent, and each trying to hold the other through a jealous fear of a third party, until cohabitation during the last two years had become a nightly affair, each mentally in the mood, but physically unequal to the task, Fred apparently being the first one to lose out. After I had informed her that her husband was probably getting discouraged at working hard every day and having intercourse every night, and that with the prospect of more years of the same ahead, and that her idea of holding his affections by too much of a good thing, was in reality prying them apart, she was greatly surprised and relieved. This was a possibility she has not realized. Dispelling their misinformation soon ended their difficulties. Now after many months they are both happily attached to each other, and she has gained 20 pounds in weight.

A minister of considerable ability developed a so-called "nervous breakdown" and after trying a number of doctors, including an osteopath, presented himself with many vague but, to him, alarming symptoms of nervousness. His wife was a woman of good physical makeup but was herself a nervous individual. Almost weekly references in his sermons of how the young people of today had degenerated, gave the clue to his difficulties. Questioning revealed that he had read some sex books years before, in which intercourse except for procreation seemed to be a sin of first order, and continence stressed as necessary to avoid the fiery regions. Lending him other literature of a more physiological nature to read, and the suggestions that he cultivate the acquaintance of his wife first, and write his sermons afterwards seemed to clear up his breakdown in a few weeks—fill his church with a larger congregation, and clear up his wife's nervous disposition.

A laborer of thirty years whom I had treated for lumbago and sciatica, caused as I thought by bad teeth and tonsils, made only partial recovery after having teeth extracted and removing tonsils. After about a year of this, and a few pounds of salicylates, he complained to me one day that his wife didn't have any passion, and wondered if anything could be done about it. A consultation and examination of the wife, a woman of evident physical ability, mother of three children, and 30, but constantly "worn out, and having to spend spells of time in bed," brought out the following: She had not experienced an orgasm for about two years. "Hubby" had been out of work most of the time, had his back trouble and so little money that they had to stay at home and not go places, as they had formerly done. Their intercourse had gradually become more frequent, until now it was one to three times per 24 hours, and, "still he didn't seem to get enough." Yet, she said she wouldn't want him to be any different, "but she didn't have orgasms any more." Questioning the husband, he admitted the frequency. Advice to both of them to moderate, with explanation, cleared up his back and hip trouble, in a couple of months. Also she got over her worn out spells in bed, and now after six months both report mutual sexual satisfaction. He is a better provider for his family, and in spite of the depression, they occasionally get out together.

Many other examples might be detailed, and of widely varying nature, but a few are enough for the object of this paper. Sexual neuroses do occur, and more frequently than our patients admit willingly. The general practitioner is in a position to get at these conditions more successfully than the specialist, for obvious reasons. Much of the domestic disquietude, and extra-marital, and adolescent biological stress, which the law and the ministerial professions so ineffectually cope with, could be largely prevented, if the medical profession would do its full share, first as teacher, then councilor and advisor. A more diligent search for sexual pathologies would also improve our averages in diagnostic accuracy, and gain lasting gratitude from a neglected portion of our following.

A PRACTICAL CONSIDERATION OF BODY COMPLAINTS IN THE ABSENCE OF EVIDENCE OF ORGAN PATHOLOGY

RICHARD H. YOUNG, M. D.,
Omaha, Nebraska.

The changing trend of medicine in the last fifty years has provided a better understanding of the behavior of the body organs in health and disease. The knowledge of what might be considered the "part" functions has been obtained at the expense of the physician's understanding of the individual as a whole. There is much to be learned concerning the behavior of the organ as integrated parts of the functioning emergent individual. Medicine educates the physician to understand the behavior of organs and systems of organs but has little to say about how they serve the individual as integrated parts of the "he" we administer to as a patient.

The method of medicine which calls for the reduction of disease to organ pathology necessitates an interpretation of symptoms of distress in relation to referable somatic or visceral structures. Such a procedure will care for the majority of people who seek medical aid—those who have palpable organ disease. However, there are patients who from their very behavior raise the suspicion of being not organically ill. A careful examination with specialty consultations and all the adjunctive methods performed in test tubes and with burettes fails to uncover organs in distress. Such cases are familiar to all in the practice of medicine. That there is a need for better understanding of these cases is well evidenced by the fact that $125,000,000 is being spent each year on such treatment as is provided by osteopathy, chiropracty, Christian Science and allied forms.

The methods of psychiatry are not familiar to the majority of physicians, are not appealing to some, and not accepted by others. Those physicians who have a veneer of Freudian methods interpret psychiatric troubles as superficial sexual difficulties to the exclusion of more practical considerations. Others reduce their interpretation to the one word neurotic. In view of the almost chaotic attitude towards these patients an attempt will be made to present a method that is devoid of speculative theory or perplexing terminology and yet useful and practical enough so that it can be called "common sense."

METHOD

The premise of such a method is that we study the individual, the integrated person. Our method is that of any scientific experiment, and is applied to the illness on the hypothesis that the symptoms are the result of biological though inadequate attempts to solve difficult life problems. In this sense the illness is an "experiment of nature."

In any experiment we are interested in (1) the facts; (2) the conditions under which they occur; (3) the development and the factors that enter and influence the course; (4) the end result. This is a method that has long been stressed by Dr. Adolph Meyer.

(1) The facts. The facts are presented in the statement of the complaint problem. Individuals without organic disease give complaints of a fairly characteristic type. The wide spread distribution or bizarre nature may arouse suspicion. A "drawing sensation at the back of the neck," "tight feeling in the throat," "palpitation," "racing heart," "trembly feeling," "diarrhea," "constipation," "gas on the stomach," "indigestion," "pain about my heart," "excessive fatigue," and symptoms of distress referable to the pelvic region are those most commonly encountered.

(2) Conditions under which complaints developed. This second step necessitates an investigation of what might be called situational factors. It is a search for factors producing the "strain" which caused the individual to develop "body protests." Those of us as individuals who have a poorly integrated or inadequate constitution find that in situations of strain, body sensations develop. Sensations that may be interpreted as signs of illness. In this day of economic depression we not infrequently have a financial status as cause of strain. Inquiry should be directed to such conditions as the family, marital and sex situations, to discover with what degree of satisfaction the individual's needs are cared for. In children the school, and in adults the work situations should be investigated to see if the distress developed under conditions of strain; work calling for an intellectual capacity beyond the native endowment. Usually the school record gives a fairly good estimation of the intellectual assets.

Besides the above mentioned situational factors it is necessary to inquire into the health and activity pace at the time of onset, the possible relationship to infection and debilitating illness. By such careful questioning we obtain a well drawn picture of the soil in which the illness grew.

(3) Development. The next step in the experiment is the course of the illness, whether long drawn out or of the "attack" type. In the development the presence of physiological accompaniments in the form of constipation, or sleep, appetite or weight loss should be sought as signs of disorder involving the whole person. Factors enter along the course that may have influential bearing. "Foci of infection" aren't always in the teeth and tonsils but may be a diagnostic statement of an examining physician or the thoughtless remark of an oversolicitous friend or anxious family. An individual under strain with resulting body sensations may be easily "infected" with ideas of serious organic disease. This particularly is true of suggestible persons and of individuals overconcerned about their health. People of dull normal or retarded intelligence are particularly susceptible and quickly become bound down by the adhesions resulting from these pronouncements. Additional situational factors of strain may be present that cause mounting difficulty.

(4) The end result. The previous steps lead to the picture the patient presents at the time of study. This evaluation of the total present status calls for more than the facts as elicited by a physical examination, it necessitates a knowledge of the individual's total reaction which includes a portrayal of the setting, emotional and ideational, in which the present complaints exist. This calls for questions as to mood, whether the patient is depressed, anxious, apprehensive, fearful or concerned, questions that concern themselves with personality functions. It is becoming increasingly necessary to be able to recognize patterns of behavior or types of personality reaction and to evaluate them as important factors to be included in the total understanding of any medical problem.

For the purpose of this paper a few of the more common end stages will be described. A label will be given to them, somewhat descriptive of the setting yet devoid of the perplexing terminology that psychiatry usually employs.

(a) Anxiety state. The anxious individual usually appears tense, restless, perhaps tremulous, occasionally with pupils dilated, face somewhat flushed and hands perspiring. In this setting of anxiety body complaints occur that give rise to great concern and fear of impending death or serious illness. The complaints may be referable to the throat, (globus), cardiovascular system (palpitation), precordial distress or tachycardia, a "pseudohyperthyroidism," or to the G-I system (diarrhea). The complaints which develop during a period of mounting tension may have acute outbreaks in the form of attacks when fear of impending death is dominant.

(b) Invalid state. The invalid behaves as one who is greatly preoccupied with his or her body complaints. The patient is usually bound down with habits of invalidism, a routine allowing little activity, self-imposed bed rest for long intervals and satisfying attentions from friends, neighbors and family. Hypochondriasis is a term usually applied to complaints occurring in this setting. The complaints are almost delusional in type and attributed to effects of exaggerated disorders of almost any organ.

(c) Depressive state. The person depressed is "slowed down," feels "low," "sad," "unhappy" or "blue." Even thinking and the passage of the time of day is slowed. He is self-deprecatory and condemnatory, and has the physiological accompaniment of poor sleep, constipation, appetite and weight loss—often as much as thirty pounds.

In this setting body complaints develop. Henry and others have shown the physiological changes that accompany this affective disorder and these changes may to a great extent account for the somatic and visceral symptoms. Perhaps the most common symptoms to arise are those referable to the G - I tract.

(d) Queer, odd, twisted states. The usual label for such a setting would be dementia praecox or schizophrenia. These twisted types of behavior reactions may provide a setting for odd bizarre types of complaints or a type of complaining that Adolph Meyer has described as "empty hypochondriacal harping." Symptoms that have a peculiar ring—"feel as though something were flowing back and forth through my brain—feels like electricity runs up and down my spine and then shoots out through my feet." Should immediately excite suspicion of one of these twisted behavior disorders.

The rigid, sensitive, suspicious person under strain may bend in the direction of a paranoid type of reaction and in this setting develop delusional beliefs of organic illness. The French have referred to the monosymptomatic hypochondriasis that may precede such a behavior reaction.

The above mentioned states do not include all settings in which the complaints of the type under discussion occur.

TREATMENT

A practical consideration of any medical problem includes a method of treatment. Many practitioners are somewhat at a loss when confronted with what is referred to as a "nervous condition." Diagnostic thoughts often run to a chronic appendix, a glandular disorder or some forms of infection that may be at fault. Symptoms that do not have an organic basis are at times referred to as "imaginations" and perhaps a tonic or sedative is given to abort the delusional belief. Where is the physician to turn for a method of treatment. Neurology is interested in disease processes which effect chiefly the central nervous system and offers little help in treating the behavior disorders that involve the person. The psychiatrist is truly interested in such patients but his methods require a special training. Many of the psychiatric interpretations of these disorders are couched in words that have little meaning to the majority. Because most of the patients with these disorders come to the general practitioner, it is necessary that he have a plan of treatment which allows him to use his own tools and methods.

The great danger in the physician's handling of what are popularly called "neurotic" cases is that he is so conditioned to the reduction of these cases to an organ basis that he will forget the individual. The case which presents an anxiety state with its findings of tremor, tachycardia, extrasystoles, diarrhea, and perhaps relative lymphocytosis and slight thyroid enlargement should not be reduced to a case of hyperthyroidism or heart disease. A thyroidectomy will not be satisfactory treatment any more than will be the administration of blunting powders to alleviate epigastric distress occurring in a depressive setting. It is towards the individual that the treatment must be directed.

In outlining any procedure of treatment in medicine the first step is the careful physical examination. An examination must be particularly exacting where there is not a palpable disease process. The examination should lead to a clear cut diagnosis which is stated in direct unequivocal form. In an understanding and sympathetic manner an interpretation should be given. The method of interpretation of necessity depends upon the condition and the intellectual assets of the patient. The patients can be told that they have a constitution that is so integrated that in situations of strain they react with "nerves," and that their nervousness in turn may so effect body functions as to give rise to symptoms of distress. Symptoms may be termed the body's protests to situations of strain. Such an explanation opens the way for the discussion of the dynamic factors in the illness and the development of an understanding on the patients part.

Treatment will vary and diverge along different paths depending upon the setting in which the complaints occurred. With the anxiety state it is advantageous to discuss the situations of strain causing the mounting tension. Usually one will uncover some incident which provided the pattern and served as the trigger to set off the anxiety outbursts. This may be a sudden dramatic death of a friend or relative, or a physicians or friends interpretation of the tension symptoms in terms of serious disabling organic illness. Once the nature and dynamics of the illness are understood and situational strain mitigated where possible it is important that the patient return to work and direct his energies in activities that provide a proper balance of work and recreation.

In the invalid state, besides the before mentioned procedures, it is important to break up the adhesions which the habits of invalidism have formed. The patient should be given a regime of activity which is written down as a prescription to which they must be faithful.

Medicine should be used sparingly. Medicine to be taken as ordered often engenders fears that after all there must be something wrong or the physician wouldn't prescribe. When given medicine the reason should be clearly stated.

When symptoms occur in a depressive setting it is again the depression that must be treated. A depressive reaction is one always charged with the danger of self-destruction and every depressed person should be considered a suicidal risk. For this reason such cases are best cared for in specially equipped hospitals. The physiological accompaniments necessitates medical treatment in the form of broken doses of barbital or its derivatives. This relieves the feeling of tenseness and allows better sleep. Food in the form of a high caloric diet should be forced to remedy the weight loss. Mineral oil usually corrects the constipation. A two hour tub at 97° F or a cold loose wet pack does much to afford relaxation. A common sense discussion of the patient's feelings of incompetence and guilt which allows him other interpretations are helpful. The depressed person conjures up all sorts of liabilities to enshroud his assets. These assets should be brought back into his view. A probing into psychogenic factors had best be avoided for fear of stirring up material that cannot be digested in a depressed state.

The queer, odd, twisted states which may provide a setting for the development of body complaints should be treated in hospitals where there are special units for psychiatric treatment. Treatment in any other environment is not satisfactory.

The plan of management advanced should be considered rather superficial, incomplete and perhaps far .too elementary to be included in the pages of a medical journal. The belief that there is need for a sympathetic attitude and interest plus a practical, workable method is the only excuse for such a presentation. Medicine must consider as important in the evaluation and treatment of any case the personality functions of that integrated unit, the individual.

SUMMARY

An attempt has been made to present a practical consideration of the cases presenting body complaints in the absence of somatic or visceral pathology. A brief for the study of the integrated individual is advanced. This method calls for the reduction of the illness to the terms of an "experiment of nature." A plan of treatment is advanced that is within the scope of every medical practitioner and one that should care for the majority of such cases.

NEWER CONCEPTIONS OF BLOOD PRESSURE READINGS WITH RELATIONSHIP TO BODY SURFACE AND WEIGHT*

A. C. STOKES, M. D.,
Omaha, Nebraska.

Hypertension or more properly hyperiesis is a direct result of the demands made on the organism by modern civilization. The back country Chinese, the natives of India, the aboriginal Negroes, rarely if ever present this particular syndrome.

Our knowledge of hypertension does not date back beyond 75 years and the most active studies did not begin until after Fisher published his article in the Medical Directors Association 1911, 23 years ago. Much writing and investigating has been done since this date by many men. In spite of this fact only last fall at the Toronto Meeting of the Medical Directors Association Mr. Arthur Hunter in discussing blood pressure made the statement "We are not yet clear as to what the normal systolic or diastolic blood pressure should be."

One individual will go along in apparently good health with a blood pressure at 35 years of 140/80 and another 120/70 and still another at 110/60 and even as low as 100/60. It has been sufficiently emphasized in the last few years that any blood pressure higher than 145/95 at any age is accompanied by a mortality greater than 100%, of the American Experience table of mortality. And yet we all know cases which have lived in our midst with blood pressures ranging from 150/90 to 170/100 to 190/105 and even 225/120 and these people many of them live to three score years and ten. The reason for these variations is far to seek and entirely beyond the scope of this paper. In the few minutes allotted to me I wish to discuss what is meant by normal blood pressure and present a rather new and unique method of arriving at a normal blood pressure for any individual.

Of course you will think at once that a normal blood pressure for me is quite different than the normal one for you. The question is then what are the factors which determine the height of the column of mercury in different individuals.

There is a definite increase of blood pressure in each decade of life as shown by MacLaren. From birth to ten years of age the variation is shown as from 50/40 to 95/55. At twenty years of age 123/80.

MacLAREN TABLE

At 30	126/82
At 40	128/84
At 50	131/86
At 60	135/88
At 70	145/92
At 80	155/98

It will be noticed from this table that the increase of the systolic is much more rapid than the diastolic hence a greater pulse pressure is always present with advancing years.

Why should there be an increase in average blood pressure with advancing years? Mosenthal says "The rise in subsequent years may be regarded in two ways, either that it is a physiological expression of advancing years or that it is a sign of physical deterioration. My own conception of the matter is that the normal adult pressure is about 120/80 and that any rise above this signifies some change in the body, though it may be nothing more than the adjustment that comes with advancing years, yet it is to be regarded as the expression of pathological changes either functional, or anatomical, or both, that react to the disadvantage of the individual." This explanation for increasing blood pressure after age 20 is justified to some extent but it fails to explain the marked increase which certainly occurs from birth to age 20. That the blood pressure is to be regarded as an index of vascular elasticity has been stressed by others, while the changes in peripheral resistance secondary to alteration in the arterioles has been cited as a probable factor.

---

*Read before the Omaha-Douglas County Medical Society, January 23, 1934.

The diastolic blood pressure must be regarded as a measure of the static elasticity of the blood vessels. This pressure is in direct ratio to the amount of blood pushed into the arteries at the last systole to the rapidity which it travels through the end arteries into the veins, that is, the more bloodpassing through the arterioles the more rapidly the pressure falls. The greater the area of these blood vessels the less the diastolic pressure. If the systole of the heart was long delayed the arteries would empty themselves as in death and the diastolic pressure would be zero. We have therefore three variable factors and one constant factor which affects blood pressure. The variable factors are (a) total area of arteries and capillaries, (b) elasticity of arteries, (c) size of arterioles. The constant is the time of the heart beat in the living normal individual. The systolic blood pressure is due to the heart beat. This is the dynamic factor and the distance between the diastolic pressure and the systolic pressure is a measure of the strength of the heart beat and is sometimes called the pulse pressure. The systolic pressure is not so constant as the diastolic and while our studies today are based on the systolic blood pressure they would be a little more nearly accurate if they were based on the diastolic pressure which could well be done.

If we desire to state this problem in another way, we have the following: Blood pressure is affected by the height and weight of the individual, the age, and the size of the heart. The height and weight has to do with the surface area, the age is proportional to the weight as is also the heart.

In a normal individual the height and weight increases or decreases the area of the blood vessels, that is, the greater the height the larger the area of the blood vessels and the greater the number and length of the same. It has been shown beyond a point of controversy that the body surface area has much to do with the size of the heart and that the body surface varies directly as the square root of the product of the height and weight. Dr. Clark, Medical Director of the Mutual Benefit of Newark, New Jersey has put these known factors into concrete shape in such a manner that we may study them here for a few moments. If now you will refer to the sheets in your hand we will go over together some of these problems.

COMPUTATION FORMULAE

$$\left.\text{Pressure} = \frac{\text{Force}}{\text{Surface area}}\right\}\ \text{by definition}$$

Force in our computation = Heart force

$$\text{Surface area} = \sqrt{\begin{matrix}\text{Wt.}\\ \text{in}\\ \text{lbs.}\end{matrix} \quad \text{X} \quad \begin{matrix}\text{Height}\\ \text{in}\\ \text{inches}\end{matrix}}$$

$$\text{Blood Pressure varies with } \frac{\text{Heart Force}}{\sqrt{\text{Wt. X Ht.}}}$$

In normal individuals the heart force varies with the heart weight, therefore

$$\text{B. P. varies as } \frac{\text{Heart Wt.}}{\sqrt{\text{Wt. X Ht.}}}$$

by integration we introduce a constant as

Formula No. 1:

$$K_1 = \frac{\text{Heart Wt.}}{\sqrt{\text{Wt. X Ht. X B.P.}}\ \text{(m.m.)}}$$

According to Miller there is a definite ratio between the heart weight and body weight. We may, therefore, write this formula:

$$\text{B. P. Varies as } \frac{\text{Body Wt.}}{\sqrt{\text{Wt. X Ht.}}} \text{ or again determining}$$

the constant we have the formula:

Formula No. II:

$$K_2 = \frac{\text{Body Wt.}}{\sqrt{\text{Wt. X Ht.}}\ \text{X B.P.}}$$

By synthetic methods we have arrived at
Formula No. III:

$$\left.K_2 = .012 \text{ B. P.} = \frac{\text{B. Wt.}}{\sqrt{\text{Wt. X Ht. X}}\ .012}\right\}\ \begin{matrix}\text{For}\\ \text{any}\\ \text{individual}\end{matrix}$$

By the use of formula No. 1 we are able to develop heart weight in any person who may present himself in your office because
$K_1 = .023$ — We have
Formula No. IV:

$$\text{Heart Wt.} = \text{B.P. X} \sqrt{\text{Ht. X Wt.}}\ \text{X } 0.02265$$

By continuing this synthesis and substituting in place of blood pressure metabolic rate we arrive at a formula in which K_3 equals the surface area of the body divided by the body weight, multiplied by the metabolic rate or to state this problem in another fashion, it is developed that the metabolic rate is inversely proportioned to the height of blood pressure or the higher the blood pressure the lower the metabolic rate in normal individuals. This agrees with the law that has been previously stated, namely, that the caloric requirements of the body is determined by the surface area of the body plus in a small degree the factor of body weight. We have therefore deduced the following proposition: First, the weight of the heart in normal subjects is determined by the surface area of the body. Second, the height of blood pressure appears to be determined in normal subjects, by the ratio which exists between the force or weight of the heart and the body surface area. Third, the importance of body surface area in the physiology of the circulatory system is suggested, since in growth, it appears to determine primarily the size of the heart, and secondarily the height of the blood pressure.

In conclusion we are aware that these concepts of blood pressure do not appear on the surface to be of any particular clinical or practical value. However, the introduction of such concepts into our literature helps each one of us to gain a more definite and practical understanding of these conditions and each added bit of knowledge will find a place sometime in our practice. Those of you who have a great deal to do with this condition, as I have, will find formula No. 3 and also No. 4 of extraordinary help in evaluating the probable amount of pathological deterioration which is taking place in any given individual whose blood pressure may be out of line. Formula No. 1 will be of great advantage to you in developing the normal heart weight of individuals who appear before you with high blood pressure and possibly left-sided preponderance of the heart. These conditions often dovetail very nicely with electrocardiographic reports.

One word with respect to abnormal blood pressure. It has been shown by many post mortems that high blood pressure is due more often to the contraction of the kidney than perhaps any one cause and in case we are unable to determine a definite cause for hypertension it is well to carefully investigate so far as may be the kidney output even though there may be no albumin or casts.

THE INFLUENCE OF HEREDITY IN THE TRANSMISSION OF OCULAR DEFECTS*

CHARLES M. SWAB, M. D.,
From Department of Ophthalmology, Creighton Medical College,
Omaha, Nebraska.

In an address delivered before an International Congress of Opthalmology held at Washington, D. C., in 1922, the late Treacher Collins(1) presented the data of a number of hereditary ocular degenerations which he contended should be grouped together for consideration and study. His arguments were based upon an extensive survey of the subject matter; it may be added that most of his observations are now accepted. The degenerations of the group as proposed by Collins included ocular palsies; postnatal cataract; amaurotic family idiocy; symmetric macular pigmentary degeneration; retinitis pigmentosa; Doyne's family choroiditis; Leber's optic atrophy; nodular and lattice-like degeneration of the cornea.

He applied to these conditions a theory which had been expounded previously by Sir William Gowers(2) in explaining the occurrence of several affections of the central nervous system. Briefly, the theory is as follows: Certain of the body tissues are normally developed but are endowed with an inadequate degree of vital force sufficient to maintain their viable state during the full lifetime of the human organism. Gowers called this condition a degeneration which is influenced by imperfect life and termed it, "abiotrophy." His definition explicitly stated that the condition is not the usual senile decay, but that the early degeneration is a transmitted hereditary defect.

The abiotrophies have not been generally discussed by writers since the time of Collins' contribution. This may have been due and rather unfortunately, to the fact that it was published in a volume that had but a limited circulation. To give it due publicity some of his data have been herein compiled; to them have been added more recent observations, in order to bring the matter up to present day acceptance.

Though hereditary ocular palsies are rare, fortunately for the establishment of this entity, cases have been studied by Collins(3), Fuchs(4), Beaumont(5), and others. The degeneration may affect either the muscles of the lids or the eyeballs or both; the intraocular smooth muscles are unaffected. Beaumont gives the account of a family in which several members of four different generations suffered from ophthalmoplegia externa. The onset of the degeneration may occur at any time from infancy to the later decades of life. Fuchs removed some of the affected muscle tissue in one case and found that it showed evidences of primary atrophy. Most of the observers who have studied and reported cases of hereditary ocular palsies have been of opinion that they were unrelated to affections of the nervous system.

---

*Presented before the Omaha-Midwest Clinical Society, Omaha, Nebr., October 31, 1933.

Regardless of whether or not we accept the theory which Collins applied to ocular degenerations there is uniform agreement that cataract is greatly influenced by heredity. Even a limited study of the published pedigrees is sufficient to convince one of the hereditary character of cataract. Many of us have seen families in which one or several members of three living generations exhibit this affection. In the case of cataract, the influence of heredity is so obvious that the laity are aware of it. They often inquire if their eyes show signs of cataract because they know of others in their family who have been so affected.

Amaurotic family idiocy is a spectacular hereditary degeneration which occurs in very young children of Jewish parentage only; the victims of this tragic condition seldom live beyond two years of age. Sir Frederick Mott(6) in speculating upon this condition, wrote as follows:

"The fact that it affects the children of Jewish parents suggests that it owes its origin to some racial inborn tendency to neuronic decay, probably associated with some exciting or predisposing factor connected with an altered condition in the chemical composition of the blood, whereby the normal biochemical interaction of the nucleus on the cytoplasm and the environmental lymph on the neuron is interfered with. 'A cell nourishes itself and is not nourished' is as true for the highly complex and specially differentiated nerve cell, with its multiple processes and their arborizations, as for a simple unicellular organism. The nucleus is the trophic center of the nerve-cell, and possesses the specific inherent energy upon which the cell depends for its vital activities and durability. We may, therefore, suppose that this extraordinary neuronic regressive metamorphosis is brought about by a conspiracy of morbid factors, viz., an inherent racial lack of specific neuronic energy and some general alteration in the chemical composition of the blood, either by the existence in it of a neurotoxin or the failure of some chemical substance in sufficient quantity for the building up of the nucleoproteid substance of the nervous system."

The ophthalmoscopic picture presented by amaurotic family idiocy is striking; one sees a deep gray opacity of the retina throughout the macular region, with a cherry red spot in the fovea. The pathology is essentially a degeneration of the ganglion cells of the retina; because these cells are most numerous around the macula is the reason for the greater density of the opacity in that region. The cherry red spot is held to be due to a contrast phenomenon,—the choroidal circulation showing through the retinal opacity at the fovea only. The ocular defects in these cases are associated with other degenerations in the central nervous system.

Another degeneration of the retina which primarily involves the cones at the macula is denominated by the overwhelming title, "Symmetric Familial Pigmentary Macular Degeneration." Besides the pigmentary changes which occur at both maculae, central scotomata develop and there is frequently an association of mental defects. This condition has not been satisfactorily delineated even by systematic writers on either ophthalmology or neurology. Some have seen fit to consider it as an atypical form of retinitis pigmentosa; others have been of opinion that it must be associated with cerebral degeneration as is the case with amaurotic family idiocy. The pathology in the eye is limited to the retina. It consists of a complete disappearance of the cones and the neural elements of the retina, together with some increase of the neuralgia and migration of pigment epithelial cells. Collins declares that when the degeneration begins at the macula, it generally remains confined to that region.

Many attempts have been made to substitute the name, Pigmentary Degeneration of the Retina for Retinitis Pigmentosa but without success. It is obviously more correct to use the former title but usage of the term Retinitis Pigmentosa throughout the past will no doubt assure its continued usage. While this degeneration is decidedly familial in character, affecting several persons in a family, it is sometimes found in but one individual and efforts to link it with other cases in the family result in failure. Among the fundus details of this affection are a pale, waxy nerve head; contracted blood vessels; scattered bone corpuscle-like pigment, which is densest at the equatorial zone. Posterior cortical cataract and ring scotoma are characteristic findings. Verhoeff(7) has recorded the microscopic study of an eye which he removed and fixed in Zenkers fluid in order to prevent shrinkage of the choroid. He found the choroid to be entirely normal, thus disposing of the hypothesis that the degeneration is a primary affection of the choroid and only secondary in the retina. It should be borne in mind that most of the opinions concerning retinitis pigmentosa have been based upon clinical data alone. Verhoeff concluded that the essential lesion is a progressive degeneration of the neuro-epithelium, the rods being first affected. He considered the changes in the pigment epithelium to be secondary to the degeneration of the neuro-epithelium, but added that both might have a common cause. The reduced caliber of the blood vessels was found to be due to an increased thickness of the adventitia which is usually too transparent to be visible with the ophthalmoscope. The waxy appearance of the optic disc is due to gliosis and not to atrophy which, indeed, plays a minor role in the blindness of retinitis pigmentosa according to Verhoeff.

Doyne's family choroiditis has not been seen with any degree of frequency, if one may consider published case reports as an accurate index. A histologic examination of one eye was recorded by Collins(1); it was from one of the cases studied by Doyne(7). He found in the involved areas, which were prone to occur in the macular region or in the vicinity of the disc, a hyaline tissue which had replaced the elastic lamina of the choroid. These changes in the choroid were but a part of the degenerative process; the pigment epithelium and the neuro-epithelium of the retina were completely destroyed in a few restricted areas.

The familial character of hereditary optic atrophy was first described by Beer(8) in 1817 but it was not generally regarded as a distinct entity until after the publication of Leber's(9) paper in 1871. Individuals who develop hereditary optic atrophy are often of a nueropathic type according to Leber. They are subject to frontal headache, vertigo and epileptiform attacks; they also experience subjective phenomena of light and color. The onset is likely to occur at puberty or when the physiological sex decline sets in. There have been many attempts in this matter as in others to connect the optic nerve degeneration with internal secretion disturbances. While the defect is generally transmitted through the female, both males and females are sometimes affected. One of the first signs of the affection is a central scotoma, indicating that the degeneration begins in the papillomacular fibers of the optic nerve. Although no case has ever been studied histologically it has been assumed by Leber, Collins and others that the degeneration of the nerve fibers is accompanied by an overgrowth of glial tissue.

According to the recent contribution of Julia Bell(10) there are twelve cases of hereditary optic atrophy on record in which complete recovery occurred; fifteen in which there was marked improvement; fifty-nine, in whom there was some improvement. Nettleship(11) wrote of cases that had recovered useful vision following hereditary optic atrophy. From these reports one sees a faint ray of hope,—perhaps the abiosis is not complete, or that the vitality of the organism as a whole may at an early stage, check, if not overcome the degenerative process.

Nodular and lattice-like degeneration of the cornea were first described by Groenouw(12) and Biber(13) respectively in 1890. Since that time Fuchs(14), Doyne and Stevenson(15), and others have pointed out the relationship between the two conditions. It is now agreed that both represent hereditary corneal degenerations, so closely related that both types may occur in the same family. Regardless of type it is always bilateral. The degeneration occurs in both males and fefemales; it may be transmitted by either. The characteristic lesions are situated in the superficial layers of the corneal stroma and may consist either of nodules or interlacing lines. In some cases there is superficial vascularization of the cornea. Collins(1) was of opinion that the opacities resulted from degeneration of the corneal nerves or their end plates. Kraupa(16) and Pillat(17) also subscribed to this view. Puscarin(18) contended that a tuberculous process in the cornea resulted in these characteristic lesions. Judd(19) and others have shown that certain individuals with this affection present evidences of internal secretion imbalances.

All these degenerations are hereditary and are transmissible as recessive characteristics, if one is justified in applying Mendel's law. The theory of Gowers and Collins explains all of the known facts well, as Verhoeff agreed in regard to retinitis pigmentosa. The acceptance of this theory, however, leaves these hereditary ocular defects as hopeless cases, cataract alone excepted. This caused Verhoeff to contend that the theory should not be accepted until every other etiological possibility has been considered. Once the diagnosis is established in these cases a grave prognosis is immediately forecast. It must be admitted that from the standpoint of therapy the outlook is anything but sanguine. On the other hand, physicians must endeavor by study and research to find some means of combatting these degenerations.

DISCUSSION

A. G. POHLMAN, M. D. (Omaha): It is obvious that the results of the extensive and valuable researches on heritable variations in lower forms with short duration of life and with numerous progeny cannot be carried over directly to human experience. Detailed study is essential before heritable factors which result in human variability and human pathology may be clearly separated from environmental influences. The situation calls for a more comprehensive study of the family history on the part of the physician who sees these cases, and for a closer cooperation between the observer and research laboratories where such evidence is collected, evaluated and preserved. The essayist has pointed out the importance of heredity as a cause in serious diseases of the eye and has summarized the evidence submitted by oculists who have done more in this particular direction than any other department of medicine.

It is unfortunate that physicians, who, after all are directly concerned with problems of human variation and human pathology, are not particularly interested or do not take the time to submit evidence to properly qualified investigators. Dr. Swab's paper should be stimulating not only to those who must consider the influences of heredity on the diseases of the eye, but his example should serve as an encouragement to the members of the medical profession to study intensively the possibilities and the probabilities of heritable factors as causal agents of the diseases with which they come in contact.

CLINICAL PATHOLOGICAL CASE REPORTS—III*

F. L. ROGERS, M. D., and J. MARSHALL NEELY, M. D.,
Lincoln, Nebr.

Mrs. D. E.—White—Female—fifty years of age—housewife—admitted to the hospital February 1, 1934.

She complained of severe precordial pain, weakness, palpitation, fullness in the throat, a sense of constriction in the chest and dizziness. She gave a somewhat indefinite history of cardiac complaints since childhood. During childhood she had noticed some shortness of breath on exertion and at times irregularity of the heart. At the age of twenty-seven she was confined to her bed for a period of several weeks with rheumatic fever. She got along fairly well until two years ago when she again noticed irregularity of the heart, marked shortness of breath on exertion and a feeling of constriction in the chest. She was overweight at the time and her blood pressure was found to be 190/100. Her condition slowly improved and she was fairly comfortable until a week before admission to the hospital. During this week the present complaints had become troublesome and she experienced one attack of severe precordial pain which caused her to be unconscious for about ten minutes. She had had no illnesses in the past except the rheumatic fever and heart symptoms. She passed the menopause three years ago. Her father died of "dropsy." One sister now has heart trouble. Her husband and one son are living and well.

Physical examination revealed a lady somewhat past middle age who appeared to be ill and uncomfortable. Weight 170 pounds; blood pressure 110/70; pulse 180; temperature 99.2. There was some cyanosis of the lips and finger tips. There were no abnormalities noted about the head or neck. The thyroid gland was normal in size and consistency. Expansion of the chest was good. Respirations were rapid, about 30 per minute. Pulmonary areas were resonant throughout and there were no abnormal breath sounds. The apex beat was felt 1 cm. outside the mid-clavicular line. The rate at the apex was 210 and at the wrist 180. The rhythm was irregularly irregular. No murmur or rub could be made out. The abdomen was pendulous. Liver was not palpable. There was some tenderness in the upper and right part of the abdomen. There was no rigidity and no palpable masses. The extremities revealed no abnormalities except the cyanosis of the finger tips. The tendon reflexes were all normal. Urine analysis showed the specific gravity to vary from 1.028 to 1.009; albumen from 2 plus to normal; no sugar and a few mucus casts and pus cells. WBC, at the time of admission, 18,600.

The electrocardiogram showed the rate to be 190 and the rhythm was irregular; P waves not recognized; QRS interval .08 of a second; RT segment abnormal in all three leads. In I the take-off is high, the slope convex downward and to an inverted T. The segment is similar in II and III except convex upward and the take-off is highest in III. There is notching of R in all leads. The axis direction is normal.

The patient's condition improved after a few days rest in the hospital. Blood pressure increased to 125/80; WBC decreased to 12,000. A double murmur could now be made out over the mitral area. The pulse rate decreased but fibrillation persisted. During the sixth week in the hospital a second electrocardiogram showed the ventricular rate to be 100 and improvement in the other changes. Treatment consisted of rest, sedatives, digitalis and quinidine. During the seventh week in the hospital the patient developed thrombophlebitis of the left leg. This, however, was not very troublesome. During the eighth, ninth and tenth weeks in the hospital the patient had several attacks of severe epigastric pain which radiated to her back and was relieved only by large doses of morphine. These were associated with increase in temperature, and further but similar abnormal changes in the RT segment of the electrocardiogram. No pericardial rub was heard. On March 14 the patient died during a severe attack.

ABSTRACT OF PROTOCOL

At autopsy a markedly enlarged heart, weighing 600 grams was found. There was a mitral stenosis present and also thrombosis of the circumflex branch of the coronary artery with an associated myomalacia cordis. In some regions there was also myocardial fibrosis. A brief description of the important lesions follows:

External examination reveals nothing remarkable. The peritoneal cavities and the pleural cavities show nothing of note. Examination of the pericardial cavity shows no excess fluid and the surfaces are smooth and shiny. The transverse diameter of the heart is 14.5 cm.

The heart weighs 600 grams. There is an opaque appearing material seen on the external surface of the left ventricle, near the apex. The surface is somewhat discolored in this region. The mitral valve admits only the tip of one finger. The leaflets are thickened, markedly retracted and adherent to one another. The circumference is only 4 cm. There is some calcium deposit in the valve. On the atrial surface of the valve, about 4 mm. from the free edge, there is an even row of fresh verucous rheumatic vegetations. There is considerable thickening at the base of the septal leaflet. The aortic valve shows thickening of the free edge of the cusps and some obliteration of the commisures. On the ventricular side of the valve is a fresh row of rheumatic vegetations. The tricuspid and pulmonary valves are not remarkable.

---

*From the Lancaster County Hospitals Pathological Laboratory.

The left atrium is markedly dilated and there is some hypertrophy of the wall. The left ventricle is not dilated but there is definite thickening of the walls. The right ventricle is somewhat dilated as is the right atrium and there is definite hypertrophy of the right ventricular wall.

Examination of the anterior descending branch of the left coronary shows a rather marked degree of intimal thickening at a point about 3 cm. from the orifice but the artery, traced to the apex shows no evidence of occlusion of the lumen. The circumflex branch of the left coronary shows complete obliteration of the lumen by a thrombus superimposed on an area of intimal thickening at a point about 4 cm. from the apex. Beginning at this point there is an ill defined, irregular area of softening of the myocardium involving the posterior wall of the left ventricle and involving to some extent the lower border of the interventricular septum. In this same region, though slightly more anterior, there are diffuse, irregular, areas of fibrous connective tissue giving evidence of previous coronary occlusion. The endocardial surface of the left atrium is opaque and thickened. The root of the aorta shows moderate arteriosclerosis.

The liver, gall bladder, kidneys, adrenals and pancreas are not remarkable. The gastrointestinal tract shows nothing of note and the uterus, ovaries and fallopian tubes are not remarkable save for some varricosities in the pampiniform plexus.

The lungs show some edema and congestion.

MICROSCOPIC

Sections of the lung show edema and congestion but no evidence of pneumonia. The ovaries, pancreas, spleen, kidneys, gallbladder and adrenals show nothing of note. The liver shows nothing remarkable save for some cloudy swelling of the liver cells.

Sections of the myocardium show small areas of scarring and in some of the sections there is almost complete replacement of muscle cells with collagen fibers. Other sections of the myocardium show recent degenerative change with edema and fragmentation of muscle cells and a mononuclear cellular infiltration. A section of the wall of the atrium shows marked thickening of the endocardium, probably on a rheumatic basis.

DIAGNOSIS

1. Rheumatic heart disease;
2. Old valve defect. (mitral with stenosis).
3. Acute rheumatic valvulitis (mitral and aortic).
4. Coronary sclerosis and myocardial fibrosis.
5. Coronary thrombosis and myomalacia cordis.
6. Cloudy swelling of the liver.
7. Congestion and edema of the lungs.

TRICHOMONAS VAGINITIS IN CHILDREN

During the past two years, Lester E. Frankenthal, Jr., and Alfred J. Kobak, Chicago (*Journal A. M. A.*, June 3, 1933), observed four cases of Trichomonas vaginitis in children. All the patients were between the ages of 11 and 14 years. Three of these cases were seen before the onset of menstruation. In each patient a history of profuse, irritating vaginal discharge was elicited. On examination, the authors found in all four a bubbly, foamy, gray to green discharge which bathed the external genitals and irritated the surrounding skin. Vaginoscopic examination showed the vagina to be definitely affected, and the summits of the rugae contained small punctate hyperemic spots. The latter were especially noted around the cervix. The diagnosis of this condition is easy to make. Routine vaginoscopic and hanging drop examination should be made in all suspected cases. The local treatment in children is very difficult and unsatisfactory because of the virginal introitus and infantile state of the genitals. Improvement of local and general hygiene together with a well balanced diet is beneficial. The one patient limited to these measures made the most satisfactory progress. The course of this infection is prolonged in childhood and it is more difficult to effect a cure than in adults.

DIETARY AND MEDICAL MANAGEMENT OF DISEASES OF GALLBLADDER; NEWER POINTS OF VIEW

John Russell Twiss and Carl H. Greene(New York (*Journal A. M. A.*, Dec. 9, 1933), state that the fundamental requirement for satisfactory results in the treatment of gallbladder disease is a correct initial diagnosis. A careful and complete diagnostic work-up is essential, for there is no one method of diagnosis that is infallible. In the majority of patients, symptoms are usually definite. Typical colic is by no means always associated with stones. Physical examination is frequently of little assistance, except in acute conditions or in cases of jaundice. The limitations of cholecystographic study must be recognized, for a diseased gallbladder may visualize and empty normally even though stones are present. Conversely, there may be no visualizntion on repeated cholecystographic examination and still laparotomy may reveal an apparently normal gallbladder. The authors have found nonsurgical biliary tract drainage a valuable supplementary method of diagnosis, provided the drainage is properly performed and the results are correctly interpreted, particularly in regard to the absence of concentrated bile or the presence of pathologic elements in the biliary sediment. The general plan of medical treatment followed in these patients has been based on the consideration of (1) prevention of biliary stasis, (2) prevention or treatment of inflammation of the gallbladder or bile ducts, (3) diet and (4) removal of calculi when once formed. Removal of foci of infection, particularly as regards the teeth and tonsils, is important as a means of preventing or treating infection in the biliary tract. Various spas have long been favored for the treatment of diseases of the liver and biliary tract. This type of therapy depends on the use of mineral waters. These contain saline cathartics in varying amounts. It is now accepted that saline cathartics as well as the ever popular calomel have little action in stimulating the secretion of bile. Alkaline powders when given before meals frequently relieve reflex gastric symptoms. Sedatives such as phenobarbital or bromides give excellent results, especially in nervous or neurotic patients. While the occurrence of a typical biliary colic followed by jaundice is diagnostic, it usually indicates the presence of gallstones and the need for surgical rather than medical management of the patient. No single diet is applicable to the management of all patients. When the patient is obese, reduction in weight is imperative. In this case, fats should be eliminated from the diet and the intake of cereals and starches reduced. A certain proportion of patients with disease of the biliary tract complain of intolerance to food. Some have been literally "afraid to eat" and are semistarved and underweight in consequence. In such cases the bland diet is important. In some instances the intolerance to food is due to reflex gastric disturbances with the development of the syndrome of hyperacidity, which is usually considered characteristic of peptic ulcer. In such cases a modified ulcer type of management with or without the use of alkalis is indicated. The authors give the cholesterol content of various foodstuffs and the fat content of the commoner foods. They present a list of the foods incorporated in the following diets: low cholesterol, low fat, low caloric; low cholesterol, low fat, high caloric; bland low cholesterol for gastric hyperacidity; high cholesterol, low caloric; and high cholesterol, high caloric. They stress the fact that these diet lists are not to be considered all inclusive and that the importance of individualization in the management of each patient is to be considered.

THE VALUE OF PSYCHOANALYSIS AS A THERAPEUTIC PROCEDURE

Of their thirty-three cases, Leo Kessel and Harold Thomas Hyman, New York (*Journal A. M. A.*, Nov. 18, 1933), classify sixteen as failures. This group includes all the true psychotic patients and all the patients beyond the age of 40 at the time of their analysis. Seventeen of the patients were helped by psychoanalysis. In five instances the cure was specific. In the remaining patients the results were good but not startling, and at times the result was not specific but due to modified circumstances. Despite the narrow therapeutic range and the limitations, restrictions and criticisms of the analytic method and its practitioners, it is the authors' belief that the freudian school offers the only intelligent approach toward the successful management of many psychiatric problems. In a broader sense, the newer teachings have widely influenced one's manner of thinking and one's approach to many of the problems that one meets in everyday practice. It is in dealing with the individual patient that disappointment is so keen and criticism so often in order. The support of the movement as a whole and the analyst as an individual has come for the most part from the public and a few enlightened internists, such as the senior author. Medical school faculties and neurologists, in particular, many of the larger hospitals and medical centers have been and in many instances still are openly hostile to psychoanalysis.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor.....Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman.....Madison
A. F. Tyler.....Omaha
B. F. Bailey.....Lincoln
R. B. Adams, Ex Officio.....Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. XIX May No. 5

THE POSSIBILITIES OF THE GENOA INDIAN SCHOOL PROPERTY

Press reports indicate that the Genoa Indian School property is to be abandoned for the purpose for which it was developed and that the national government has tendered the property to the state of Nebraska for such use as the state may see fit and that Governor Bryan on behalf of the state has accepted it.

This proposition is of direct interest to the medical profession which is always in the van in humanitarianism. There is a crying need in Nebraska for two public institutions—an Institution or Colony for Epileptics and a Home for the Aged and Infirm. Both needs are pressing, but the former is the most crying need. The property of the Genoa Indian School with its large acreage of the most fertile lands will make an ideal colony for epileptics.

We have heretofore discussed this matter. Under existing conditions the only institution to which an epileptic needing care may be admitted is to one of the hospitals for the insane. Most epileptics are not insane as we ordinarily understand that term, but many have short periods of confusion and delirium following the epileptic fit. Many are quite capable of self-support and they should be given the opportunity under organized supervision. Approximately three hundred epileptics are inmates of the three hospitals for the insane, and it is reasonable to suppose that at least an equal number of epileptics are in the care of their immediate relatives, many of whom could be better cared for in an institution such as is proposed. At least eleven states: Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Indiana, Michigan. Iowa, Kansas, and Texas have colonies for epileptics with an average population of five hundred. All have been developed within comparatively recent years, and the practical success of the movement is undoubted. Let us have a colony for epileptics.

A home for the aged and infirm is also a crying need in Nebraska. The condition of those aged persons in mental as well as in physical decadence must call forth our utmost sympathy. Every community has cases of this kind that cannot be well cared for at home for various reasons, and commissions of insanity are frequently invoked to pass on such persons with a view to committment to hospitals for the insane. A hospital for the insane is not a suitable place for the care of these unfortunates, but conditions surrounding the family life of these persons are often such, that for want of a more suitable place a considerable number become inmates of institutions for the insane.

A QUESTION OF MENTAL COMPETENCY

Here is a question of mental competency: The commission of insanity found the patient had mild delusions of persecution, but that he was not a dangerous person and he was not committed. A small sum of money had been left for him by his deceased father. The question of a guardianship to conserve his estate ($500) came up in county court. The physician called to testify in the matter stated that it would make a difference to him in answering the question of competency whether the amount involved was a matter of thirty thousand dollars or of a small sum like three hundred or five hundred dollars. The testifying physician expressed the opinion the person under consideration was competent to take care of his small inheritance and the court so ruled. Attorneys in the case said they had never before heard a like proposition advanced.

THE ANNUAL MEETING, YOUR MEETING

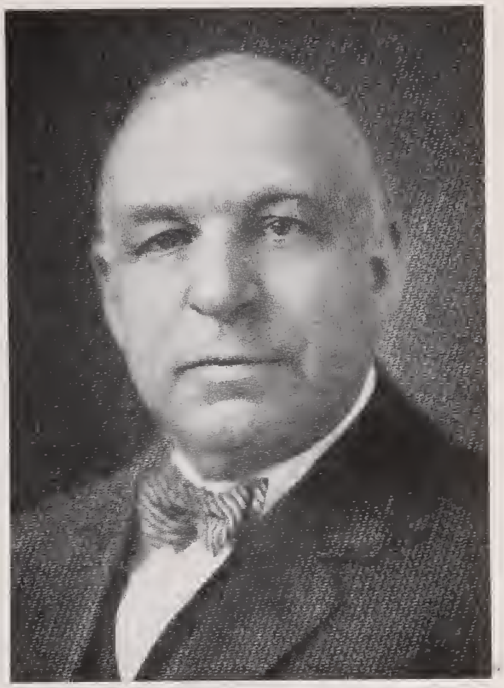
The approach of the annual meeting is an event to which physicians always look with eager anticipations, and well they may for at the annual

Presenting the Incoming President

Joseph Bixby was born in Minonk, Woodford county, Illinois, June 27, 1875. The Bixby lineage in this country can be traced back to the Seventeenth century. He came to Nebraska with his parents at an early age and attended the public schools at Diller, the Lincoln Business College and the Nebraska University. He attended Rush Medical College and was graduated from the University Medical College, Kansas City, in 1900. His entire medical career has been in Fillmore county, Nebraska, and since 1902 he has been located at Geneva, where he has for many years been a very busy man, professionally. He has also been prominent in the councils of the Republican party.

Dr. Bixby has been prominently identified with the Nebraska State Medical Association and its component societies for thirty years, has been president of his home county society five times and secretary of the same twelve times. He assisted in the organization of the Seventh Councilor District Medical Society, was its first secretary and .second president. He has always taken an active interest in the economic problems of organized medicine. He has two sons, aged 15 and 10 years. Mrs. Bixby passed away in 1925.

Dr. Bixby will succeed to the presidency of the State Association on the first day of the forthcoming annual meeting, May 22, 1934.



DR. JOSEPH BIXBY

---

meeting they meet their friends and acquaintances, their classmates, their teachers. They take their places on the program or listen to others on the program. The newer advances in medicine are stressed by scientific leaders for the benefit of the profession. No one can attend such a meeting without being vastly benefited by the scientific and social contacts made.

The economic problems of the profession are the concern of every member and the annual meeting is the time and place to give and get viewpoints and to determine matters of policy.

It is to every one's interest to take part in the moulding of the policies of the association. Those who do not take part in the moulding of the policies in and out of meeting are not doing their duty by organized medicine.

If matters of policy as determined at the annual meeting are not in accord with your ideas, be a good sport and accept the result with equanimity. Legislation of all kinds, city, state and national are matters of compromise—the majority prevailing.

The annual meeting this year occurs in the latter part of May—22, 23, 24—usually a rather quiet time in the field of practice and should result in an unusually large attendance.

EPIDEMIC APPENDICITIS?

Early in April it was reported that about thirty-five cases of appendicitis had occurred in the Kenesaw community within forty-five days. Of the number reported eleven patients were in the hospital at the same time. Thirty-one were operated upon and one died. The cases occurred mostly among school children. Kenesaw is a village of about six hundred people.

MOTHER'S DAY AND MATERNAL MORTALITY

May 13th is Mother's Day. There is sentiment in this occasion that appeals to all but there is more than sentiment for the doctor who is all too well aware of the penalty which maternity entails.

The Maternity Center Association of New York City is making a remarkable record in reducing maternal mortality and is now seeking the cooperation of the medical profession in this much needed enterprise. This institution is asking the doctor to consider well the many factors that are contributing to maternal mortality and the necessary steps that should be taken to correct existing conditions. It is worth while to inquire why it is that childbirth has today all the hazards of twenty-five years ago, while tuberculosis, typhoid fever and diphtheria are largely under control. Thirteen thousand mothers lost their lives in childbirth last year. Two-thirds of this number could have been saved for they died of preventable disease and injury. And so the New York Maternity Center has a program of "planned economy" which is to be achieved by means of a country-wide effort to appraise the maternal fatalities of each community. This is to be done by women's clubs and men's clubs, cooperating with local obstetricians, hospital executors and medical societies. Local surveys are to be made and the findings recorded on blanks supplied by the association. These surveys should reflect the local needs of the community.

Just how far-reaching such a survey will be remains to be seen. The White House Conference made a survey that cost in the neighborhood of six hundred thousand dollars, but the survey embraced all problems of child life and maternity which is quite another thing than is here intended. We should welcome any movement that promises to contribute to a betterment in obstetric practice. The New York Maternity Center has reduced the maternal mortality in its clinic 66 per cent and what they have done every community can do. No deliveries are made in this institution. It is essentially a prenatal clinic and the gains that have been made in the conservation of life and health are the result of superb supervision of the expectant mothers. Maternal mortality can be more than halved by adequate prenatal care. It is worth while. The New York Maternity Center will cooperate with you in every way. Write them for literature.

—Palmer Findley, Omaha.

AUTHORITATIVE HEALTH EDUCATION

The old homeopathic law that like cures like, can have a timely application in our present-day health education advertising. Through our different senses of perception, especially the retina and the tympanum routes, we are besieged today with false health education. Through the radio, the billboards and full-page magazine advertisements, we are getting a constant play of false health education, with just enough truth and a slight play of philanthropy to carefully camouflage a purely commercial greed. These high pressure advertisers play upon the purse and the health of the same people whom we so earnestly try to get well and keep well. Dr. Bauer, of the Council on Medical Education of the A. M. A., believes that we must heed the plainest hand writing ever written on any wall admonishing the physician that he must function as a health educator, if we are to save the public from its own folly and retain our leadership among guardians of health.

At this particular period the public insists upon being educated about its health more than ever before. It becomes doubly necessary to respond to this public demand and in every way possible to assist in differentiating between the true and false in health education. Is it not a good opportunity to use the old homeopathic law and make like cure like? The better people are recognizing the need of authority from which health education emanates. The better publishers deserve a great deal of consideration, because they, too, recognize the lack of authority from which much of this false health education emanates, and which if accepted would be highly profitable to them. Yet the better publishers decline it. Too many of them still let down the bars. Likewise, the better radio broadcasts are learning to accept health education from the better sources; but in far too many instances are they concerned most with the profitable harvest.

The American Medical Association, through its Council on Medical Education, believes in this principle of like curing like, and accordingly they are broadcasting through seventy district and county medical societies, these radio health education programs. Likewise the American Medical Association is to be complimented on its broadcast of health education through its Hygeia magazine. Members of the Nebraska State Medical Association should know that they can get for local newspaper publication or local radio broadcast, much health education material from the A. M. A. Hygeia without cost. Why not write to Hygeia and ask for information concerning their monthly Clip Sheet or news which you can release through your local newspaper or radio?

More county societies, and indeed our state medical association, through its public activities committee, should be emanating more of this correct health education. Try to select committeemen who have some interest along this line. That their enthusiasm may not carry them too far nor become too personal, depend very largely at first on what Hygeia may put out, inasmuch as it has been carefully audited. Some day our state association may have an executive secretary whose duty it shall be to direct such activities as this, as well as to supervise our *Journal,* our general secretary work, and our many other committee activities. Do not stand aloof while the false advertiser, to his own profit, contaminates the better health activities of the state. Doctors have always been constructive, acting individually as local health advisors, directing legislation pertaining to the health matters of the community, and here again is an additional opportunity, a task, and a duty. Fight fire with fire. Meet the need in health education by establishing correct sources of authoratative emanation: namely, the individual doctor; the county and state committee on public relations, acting through avenues such as lay clubs, university extension departments, local newspapers, radio broadcasts, and the public press at large. Do not go forward as health educators so fast as to make bad errors, but go forward.

—J. Stanley Welch, Lincoln.

MAY DAY — CHILD HEALTH DAY

On May 1st we celebrate the tenth anniversary of National Child Health Day. In the years since its initiation by the American Child Health Association in 1924, the observance of the day has undergone significant changes. Each year it has struck a deeper note. Each year new groups have realized that they had a contribution to make. Steadily from May Day to May Day communities have come to understand that teamwork for child health is for the best interests of children.

Of all the values of May Day-Child Health Day, perhaps the greatest is the opportunity it presents to enlist the active interest of groups which might otherwise not give the subject of child health any particular thought, and to draw them into the general program.

The spirit of cooperation, be it purely local or state-wide, has been fostered by the activities which have had May Day-Child Health Day as their inspiration. Communities working together for a single project, have got a taste of real cooperation, and have discovered its values as well as its difficulties. They have found that working together was time-saving, money-saving, and even sometimes life-saving.

At this time, more than ever, when appropriations and budgets are being almost universally cut, individuals and groups should strive to come together for child-saving programs connected with the desperate needs of the hour.

The Conference of State and Provincial Health Authorities of North America, the body which last year assumed the future responsibility for the national conduct of Child Health Day, believes that adequate care for babies and for expectant and nursing mothers must be the foundation on which to build a nation of healthy children. They have therefore elected to continue the use this year of the slogan, MOTHERS AND BABIES FIRST. The health officers are fighting to maintain the public health measures which they believe most necessary to protect infant and maternal health.

From the first year of its observance, May Day-Child Health Day has had for its symbol the daisy. There is something in the milk white beauty of its petals which recalls the innocence of childhood. But those who know this flower will recognize also its vitality. Drought cannot kill the daisy; storms pass over it in vain. We want this vitality for our children; we want so to build that, as Calvin Coolidge once said, "America may produce men and women worthy of our standards of citizenship." This can only be done by joint action. No home, no school, no public or private agency can take on the whole task. Teamwork and understanding between all are needed to reach the goal of May-Day—children whole and healthy in body, mind and spirit.

THE FLOATING CONGRESS OF THE PAN AMERICAN MEDICAL ASSOCIATION

The Floating Congress of the Pan American Medical Association, according to an announcement in *The New York Times,* closed on March 30, when the 561 passengers, comprising 250 surgeons and physicians and their families, returned from a sixteen-day cruise on the Panama-Pacific liner Pennsylvania. The Pennsylvania touched at Havana, Colon, Puerto Cabello, La Guayra and San Juan, where the chief executives of five countries welcomed the delegates.

During the cruise sixty-four scientific sessions were conducted, including a general meeting at La Guayra in which 150 Venezuelan physicians participated. One hundred and seventy-five scientific papers covering every phase of medicine and surgery were presented by physicians of North and South America.

During the cruise Dr. Chevalier Jackson, professor of bronchoscopy and esophagoscopy at Temple University, Philadelphia, was installed as president to succeed Dr. John O. McReynolds, of Dallas. Dr. McReynolds was one of the delegates honored in Havana when President Mendieta bestowed on him the Order of Carlos Finlay.

In a joint statement issued on the ship by the new president and Dr. Joseph Jordan Eller, of New York, director general of the association, the congress was called "a dramatic and remarkably successful step in the establishment of permanent good-will between the Americas."

The next convention of the association will be held in Rio de Janeiro, where the Brazilian Government will act as official host.

Dr. Bernard Sachs, president of the New York Academy of Medicine, is reported to have said that he believed that the congress would strengthen the bonds of amity between people of the Western Hemisphere. "Above and beyond this," he said, "this congress has brought together men and women from all parts of the union in the various specialties and has afforded numerous occasions for exchange of ideas between groups of medical and surgical specialists such as no other congress has ever afforded. Personally, I feel that the scientific sessions have been of a high order of excellence and more stimulating than any congress I have ever attended."

THE RESTORATION OF THE GENERAL PRACTITIONER

Dean Lewis, Baltimore (*Journal A. M. A.*, March 31, 1934), points out that during the economic depression the general practitioner (consultant) has fared better than the specialist, for more people have discovered that they could be treated in their homes; his overhead has not been high. Many consultants have changed their point of view and have condescended to make house calls. So, as far as medicine is concerned, the economic depression has automatically restored some of the old order. The author believes that the restoration of the doctor should begin in the medical school as he should know how to make a diagnosis, he should know the natural course of disease and how to observe it, and he should know what therapeutic measures should be instituted to meet the indication and when they are to be employed. During the past few years, emphasis has been laid on the laboratories. This was necessary because such rapid strides had been made in biochemistry, biophysics, bacteriology and the histologic examination of tissue. The laboratories have been obtained and now more stress should be laid on the clinic. More clinical material is required, for in modern medical teaching the technic of diagnostic procedures is no longer simply demonstrated; but they are learned by the students and practiced by the student until these procedures can be used independently. In teaching hospitals an endowment should provide the required number of free beds and the patient should be the patient of the student, who under strict supervision can assume charge. This is not possible under any scheme in which the patient pays full or half rates. The medical training which many students now receive makes the doctor dependent on hospitals, laboratories technicians, nurses, consultants and specialists. These distinctly influence the attitude of students and have a deciding influence in the development of specialism. The importance of physical examinations cannot be overemphasized, for the student of medicine who observes well, percusses well, hears acutely and feels intelligently has advanced far in the way of diagnostic ability. With a due apportioning of diligence, the essentials of anatomy, physiology and pathology can be mastered. During the brief years of pupilage the details of the various branches cannot be grasped so that all cases can be accurately diagnosed and successfully treated. A deep knowledge of pathology is the foundation stone of diagnostic ability. Every effort should be made to bring these practitioners into contact with hospital facilities. Unfortunately, at the present time many of these men from the day they begin practice are excluded from hospital services. The medical profession is largely to blame for the development of specialism and the eclipse of the doctor, for during the past few years the patient has been educated to believe that the speecialist is the last word, and as a result patients consult specialists first rather than the doctor. The licensing of specialists or the recognition of certain qualities which specialists should have will limit considerably their number and increase the number of doctors.

APPLICATION OF INSURANCE PRINCIPAL TO MEDICAL FEES—REPORT OF THE ECONOMICS COMMITTEE OF THE LANCASTER COUNTY MEDICAL SOCIETY

"You have heard the report of the Subcommittee on the investigation of the 'Hospitalization Corporation.' This committee as a whole feels that organizations of this type are inimical to the public welfare and contrary to the best interests of the medical profession, because of the following features:

"1. The money spent by the public is not all spent for professional services; a large portion must be used for promotion, policy sales, and profits to stockholders.

"2. Free choice of physician cannot be assured since many physicians will not agree to serve the organization, and they will not permit choice of these physicians.

"3. Solicitation of patients for the physicians of the organization is directly practiced through the policy sales.

"4. Experience has shown that these organizations are usually founded without adequate capitol reserve for safety, that many of them fail to furnish adequate medical service, and that they lead to commercial competition among themselves with resulting deterioration of service.

"We believe that the members of the Lancaster County Medical Society should take a firm and united stand against the private medical insurance organization; therefore be it resolved that any member connecting himself with such an organization be automatically declared guilty of violation of Article I, Section 4, of the Principles of Medical Ethics of the American Medical Association, and subject to expulsion from the Society. 'Solicitation of patients by physicians as individuals, or collectively in groups by whatever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communication, is unprofessional.' etc.

"If the profession in this community wishes to apply the insurance principle to medical practice, the committee believes that it should best be conduct by the profession itself. This committee is studying such schemes with the purpose in mind of presenting a tentative plan for presentation to the Society, which it may modify and put in force or hold in abeyance as it sees fit. The plan will be prepared and presented later."

* * * * * *

This resolution was presented at the meeting of April 3. 1934, and was passed by unanimous vote.

EDITORIAL PARAGRAPHS

The American Association for the Study of Goiter will give a three days session at Cleveland, Ohio, June 7, 8, 9, just preceding the annual meeting of the American Medical Association.

The date of the Nebraska medical examination has been changed to June 8-9, at the University College of Medicine, Omaha. All applications must be on file at least 15 days prior to date of examination.

The American Medical Golfing Association will hold its twentieth annual tournament at the Mayfield Country Club in Cleveland on Monday, June 11, 1934, immediately preceding the annual meeting of the American Medical Association.

Wage-earning families who suffered serious loss of income on account of the depression had 39 per cent more babies in the period 1929-1932 than their neighbors whose incomes were not reduced following 1929, according to a statement given out by the Millbank Memorial Fund.

In the March number of the *American Journal of Diseases of Children*, Dr. Ernest Wegner, Lincoln, reported a case of Congenital Chylous Ascites, cured by the operation of venous peritoneal anastomosis. The case is representative of a very rare anomaly and the report is intensely interesting.

A Clinic given at the Orthopedic Hospital, Lincoln, March 20, by Drs. Orr, Teal and Alcorn was a very interesting event for those in attendance. The cases presented and the operations done on that day well illustrated the proposition that there is practically no limit to reconstructive surgery.

The American Society for the Control of Cancer issues a monthly *Bulletin*. The Bulletin contains each month a number of short authoritative articles on cancer research and therapy. It presents an easy and practical way for the physician to keep abreast of cancer control progress, at a subscription price of but $1.00 per year.

It has been demonstrated by the American Public Health Service that the American dog tick, *Dermacentor Variabilis,* also called the eastern wood tick is a host of *Bacterium Tularense*. Engorged ticks furnished by Dr. C. M. Pierce, Chadron, Nebr., in June 1931, first made this discovery possible. Since then cumulative evidence has come from other sources, notably Minnesota and California. (See Public Health Report for March 23, 1934).

A recent North Platte murder trial again brought to the forefront the unsolved problem of medical expert testimony. For some years judicially minded people—physicians, attorneys and laymen—have advocated the enactment of a law which should give the court the power to appoint experts as friends of the court to give testimony in such cases. This would seem to solve the problem of medical expert testimony. Certainly the present method does not solve anything.

The annual meeting of the American Association on Mental Deficiency will be held at the Hotel Waldorf Astoria, New York, May 26, 27, 28 and 29, 1934. The Saturday session, May 26th, will be given over to the sociological, psychological and the special educational aspects of the problem in order that local social workers and school teachers may have an opportunity to attend without interfering with their regular duties. The Tuesday afternoon session will be a conjoint meeting with the American Psychiatric Association. Data as to the program may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

Last month's *Fortune* contained a very extensive illustrated article on the new radium fields in Canada that have been opened in the last two years. The government is in control of the output and is supplying radium to various institutions in Canada. Among these institutions is the University of Toronto. May 30-31, June 1, the University of Toronto will open a Radium Institute with a large supply of radium. Prof. Claude Regaud, easily the greatest authority in the world on radium therapy, will be there, along with other European highlights. Dr. Palmer Findley, Omaha, will present a paper on "Complications and Disappointments of Radium Therapy" for the event. It is believed this will be the outstanding meeting of all time on this side of the water, as far as radiology is concerned.

Physicians who did surgical service for the CWA workers are now receiving checks for their service to which is appended an explanatory slip politely informing them that their bills have been cut below Nebraska Compensation Commission figures: "The Commission is allowing your voucher rendered in this case at a lower rate than that charged by you. It is realized that the fees allowed in this case may be lower than the usual fees charged to the average private patient. However, it must be borne in mind that the setting up of the Civil Works Administration Program with the allowance of compensation benefits will to some extent relieve the medical profession of the burden of free treatment. In view of the Fedral employment of these people as a relief measur, it is not believed that the average fees genrally charged in each locality are warranted. You will probably find that the fees allowed in this case are not less than the fees you charge a private patient in the same income class as the injured employee or the minimum fee schedule of your county Medical Society. They can be compared favorably with fees allowed for medical treatment of the unemployed under authority of the Federal Emergency Relief Administration."

To the Woman's Auxiliary to the Nebraska State Medical Association and all Others Interested in Progressive Medicine:

Greetings: The fruits of the efforts of my predecessors have been bountiful during the year of my service as President of the Medical Auxiliary of the state. Despite the period of economic stress our membership has increased, while loyal service has characterized the work of the Auxiliaries.

Aside from the purely social appeal of our group, the membership is conscious of their potential strength through contact with non-medical groups, and the opportunity thus afforded to extend the interesting and fascinating story of organized medicine and its relation to civilization.

MRS. B. F. WILLIAMS

At no period in history have economic forces influenced organized medicine with more baneful results. The implication is obvious.

As a member of the Auxiliary only can you best aid in maintaining the morale of this vast army of fine men and women who go forth to battle disease and pestilence.

As a member of the Auxiliary you can best stay the hand of those who seek to advance ideas of government and economic theories inimical to the welfare of progressive medicine.

Upon co-operation, economists say, our national existence depends. If united effort can determine the detiny of our nation, it must certainly be of value to organized medicine.

Come to Lincoln May 22-23-24, to the Cornhusker Hotel, our headquarters for the Convention. We will all be better for the brief outing and the new friendships made.

"Shelter is gone with the night and food lasts but
a day.
But the friendly clasp of a friendly hand
Will cheer us along the way."

—Mrs. B. F. Williams.

AUXILIARY NEWS NOTES

Lancaster County: Twenty-seven were present at the Annual Spring Luncheon held at the University Club, April 11. Mrs. Evertt Angle's paper on the Copeland Bill was received with enthusiasm and many questions.

Definite plans for the State Convention, May 22 to 24, were discussed and the following officers were elected: President, Mrs. Evertt Angle; President-elect, Mrs. J. E. M. Thomson; Secretary, Mrs. C. H. Arnold; Treasurer, Mrs. Torence Moyer.

* * * * * *

Grand Island: Ladies of the Tri-County Medical society's auxiliary met at the St. Francis hospital March 5 and, following a brief business session, they devoted the time to making a quilt, which will be given to some needy family in the community.

PHILADELPHIA ACADEMY OF SURGERY

The Samuel D. Gross Prize—Fifteen Hundred Dollars—Essays will be received in competition for the prize until January 1, 1935.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1935.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

WILLIAM J. TAYLOR, M.D.,
EDWARD B. HODGE, M.D.,
JOHN H. GIBBON, M. D.,
Trustees.

VENEREAL DISEASE INFORMATION

For a number of years the U. S. Public Health Service has been publishing, for the information of physicians, health officers, and others, a monthly abstract journal known as "Venereal Disease Information." This publication contains usually one original article on a subject of general interest in connection with the venereal diseases and numerous abstracts from the current literature pertaining to these diseases. In the preparation of this abstract journal more than 350 of the leading medical journals of the world are reviewed and abstracts made of the articles on this subject.

The cost of "Venereal Disease Information" is only fifty cents per annum, payable in advance to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is desired to remind the reader that this nominal charge represents only a very small portion of the total expense of preparation, the journal being a contribution of the Public Health Service in its program with state and local health departments directed against the venereal diseases.

NEBRASKA SOCIETY OF RADIOGRAPHERS

The Nebraska Society of Radiographers held its annual meeting in Omaha, April 7th. President Pauline McGough presided at the business meeting. The following officers were elected:

President, Mrs. Helena MacCloud, Omaha; vice president, Miss Molly Kirk, Omaha; second vice president, Miss Irma Brauer, Lincoln; secretary-treasurer, Miss Jane McDonald, Omaha.

At 7:00 p. m. the radiographers, roentgenologists and their wives met in the Hotel Fontenelle for the annual banquet. The decorations were carried out in orchid and gold. After a varied program of music, dancing and recitations an address was given by Dr. A. F. Tyler. Impromptu talks were given by Drs. R. W. Fouts, H. B. Hunt and J. F. Kelly.

ANNUAL MEETING, NEBRASKA TUBERCULOSIS ASSOCIATION

The annual meeting of the Nebraska Tuberculosis Association will be held at Lincoln, May 22.

The meeting the physicians will be especially interested in will be a dinner at the University club in Lincoln at 6:30, Tuesday, May 22nd. Charles A. Stewart, M. D., Ph. D., of Minneapolis, will be guest speaker. He is assistant professor of the University of Minnesota Medical School, the attending pediatrician of Lymanhurst School for 10 years, and the chief exponent among pediatricians of Myers' views on tuberculosis. He has been an extensive contributor to literature, having written five articles on tuberculosis in 1933 alone. His experience covers observation of 10,000 children passing through Lymanhurst in the past ten years. He, of course, will talk on "Childhood Tuberculosis," as that is the thing we are particularly interested in just at present.

Dinner, 85 cents.

THE SOCIETIES

The **Otoe County Medical Society** held its regular monthly meeting at St. Mary's hospital in Nebraska City, March 12, and heard two Omaha doctors give papers on chest disease. Dr. Joseph Weinberg discussed the surgical aspect while Dr. John Allen reviewed the medical phase of chest ailments.

Chronic bronchitis in which large or small abscesses are developed was discussed by Dr. Weinberg. Marked changes have been made in the treatment of these diseases and surgery which had a 50% mortality rate a few years ago, today has only 20%.

It was the contention of Dr. Allen that not more than 20% of the patients at tuberculosis hospitals are actual victims of the disease. "They are sent there by a judge, not by a doctor," he said.

Fever, weakness, cough, certain findings in the chest, were formerly factors that led to a tuberculosis diagnosis, Dr. Allen said. The disease is in its terminal or fatal stages when all these symptoms are easily noticed he said. Problem of the doctor of today is to find it in its earliest stages so that a cure may be made if possible.

The **Polk County Medical Society** met on March 23rd at Osceola.

The Federal Relief Administrators medical aid proposition as accepted by the councilor meeting in January was discussed and the society voted to reject the plan. The following reasons are mentioned as cause:

1. Unfairness of the fees to rural practitioners, unfairness as to the reduction of fees while other classes of work, food and clothing are not asked to make a reduction.

2. Establishing a precedent as to future fees, both county and private.

3. Vagueness as to eligibility of those coming under this class.

Election of officers resulted in the selection of Dr. J. B. Williams, Polk, president; Dr. C. L. LeMar, Osceola, secretary-treasurer; Dr. A. A. Blum, Shelby, delegate.

Regular meeting of the **Omaha-Douglas County Medical Society** was held March 13.

Scientific program consisted of papers presented by the Pottawattamie County Medical Society.

The first number on the program was by Dr. Gordon N. Best on "Chronic Obstruction of the Duodenum," discussed by Drs. Bliss and Fouts.

Dr. M. C. Hennessy addressed the society on "Foreign Bodies, Particularly Gallstones, Producing Bowel Obstruction." This paper was discussed by Drs. Russell Best and James Kelly.

The third paper was an illustrated talk on "Reconstruction of Function in Paralyzed Extremities," by Dr. Karl R. Werndorff.

Regular meeting March 27, was called to order by Dr. Hamilton, president.

Dr. A. Levinson was the only speaker on the scientific program. He talked on "Diagnosis and Treatment of Meningitis Including Both Clinical Manifestations and Cerebral Fluid Changes."

The paper was discussed by Drs. Clarke, Young, Henske, Keegan, Wigton, Sachs, Bliss, Bennett, Fitzgibbon and Henry.

The **Richardson County Medical Society** met at the Hotel Weaver at Falls City, March 21, with an attendance of twenty-three doctors. The program presented was both very interesting and instructive.

"Agranulocytosis," Dr. Warren Thompson, Omaha.

"Intra-abdominal Perforations," Dr. Chester Waters, Omaha.

"Differential Diagnosis in Knee Conditions," Dr. R. D. Schrock, Omaha.

The **Scotts Bluff County Medical Society** held their regular monthly meeting on April 12th. Doctor F. L. Rector, field representative of the American Society for the Control of Cancer, presented the "Canti Film" and discussed the activity of the cancer society.

A four reel film on "Traumatic Surgery of the Extremities" was well received. The society is presenting health talks from KGKY radio station three evenings each week.

The membership is showing a great deal of interest in our meetings by an increasing attendance.

—W. C. Harvey.

The semi-annual meeting of the **Third Councilor District Medical Society** was held at Tecumseh under the presidency of Dr. J. A. Waggener, on the afternoon and evening of April 18, with an interlude for a 6:30 dinner. The program looks very interesting:

"Polycythemia Vera Case Report," Dr. Harlan S. Heim, Humboldt.

"Pathology of Uterine Bleeding," Dr. H. M. Hepperlin, Jr., Beatrice.

"The Recognition of Complications of Acute Infectious Diseases," Dr. W. O. Colburn, Lincoln.

"Gynecological Treatment for the Relief of Sterility," Dr. Harold Morgan, Lincoln.

"Asthma in Children and Adults," Dr. Edward Maloney, Omaha. Discussed by Dr. Geo. R. Underwood, Lincoln.

"Diagnosis and Treatment of Goiter," Dr. Louis D. McGuire, Omaha.

"Strokes, Their Diagnosis and Treatment," Dr. Thomas L. Houlton, Omaha.

"Fixed Versus Elastic Traction in Fractures," Dr. H. Winnett Orr, Lincoln.

The **Sixth Councilor District Medical Society** met at Shelby, April 11. Dinner and meeting at the Methodist church. About 35 members were present. Three papers were presented by Omaha men: "Medical Management of Biliary Disease," by Dr. M. C. Howard; "Surgical Considerations and the Complications in Gallbladder Disease," by Dr. R. Russell Best; and "Eczema—Common Cause," by Dr. J. A. Borghoff.

—Lloyd Ragan.

A regular meeting of the **Lancaster County Medical Society** was held March 20. The program of the evening, a symposium on Toxic Goiter was arranged by Dr. Hilton and presented as follows: "Preparation to Reduce Surgical Risk," Dr. F. L. Rogers, Dr. E. G. Zimmerer, Dr. C. F. Andrews; "Adaptation of the Operative Procedure to Case," Dr. Harry Everett; "Postoperative Care and Complications," Dr. J. Stanley Welch; "End Results," Dr. Roy Whitham. The subject was discussed by the following: Drs. Covey, J. C. Thompson, Flansburg, Welch, Everett, Rogers and Hilton. Dr. Lehnhoff announced the presentation of portrait photos of Dr. Frank Billings to the Society by Dr. N. C. Gilbert of Chicago, and Dr. Geo. Coleman.

The **Washington, Dodge and Burt Counties Medical Society** held a meeting at Herman, March 26. The American Legion Auxiliary provided the dinner and Drs. James Allen of Craig, and Drs. Grant Reeder and R. T. Van Metre, Fremont, supplied the program.

The April meeting of the **Madison Six County Medical Society** was held in the basement of the Congregational church, Norfolk, on the 17th. The meeting, which was well attended, was preceded by a dinner. The program: Dr. J. Calvin Davis, Omaha, "Conservative Treatment of Chronic Discharging Ears"; Dr. F. J. Bean, Omaha, "The University Hospital"; Dr. Olga Stastny, Omaha, "Trichomonas Vaginalis."

HUMAN INTEREST TALES

Dr. Paul Thorough has moved from Cook to Syracuse.

Dr. A. A. Conrad, Crete, has been elected president of the local Rotary club.

Dr. G. W. Reneker, Falls City, has filed for representative from that district.

Dr. H. C. Miller, Omaha, was reported seriously ill at his home early in April.

Dr. A. M. Poore has located at Doniphan in succession to Dr. R. E. Sawyer.

Dr. and Mrs. H. L. Kindred, Meadow Grove, recently spent some time in Kansas City.

Dr. and Mrs. G. A. Heath, Fairbury, spent some time in Texas and Old Mexico recently.

Dr. Joseph Kunel, Alliance, has been elected head of the Alliance Junior Chamber of Commerce.

Dr. and Mrs. S. P. Wallin, Snyder, motored to Illinois to visit relatives the first days of April.

Dr. F. W. Johnson, Fullerton, was acclaimed the first citizen by local Lions organization early in April.

Dr. R. C. Kirschman, Wilbur, spoke to the local high school recently on "Disinfection and Quarantine."

Dr. J. F. Premer and Dr. L. L. Wood, Benkelman, have formed a partnership for the practice of medicine.

Dr. Margaret Koenig, Waterloo, gave a European travel talk before the Omaha Women's club last month.

New hospital facilities have been provided at Blair. The place is called Court View, a transformed apartment house.

Dr. Richard Young, Omaha, is giving a series of lectures on personality problems before the Y. W. C. A. in Omaha.

Dr. John E. Pulver, Omaha surgeon, has become chief surgeon of the Northwestern Railroad system and has moved to Chicago.

As a result of a furnace exploding in his face Dr. A. G. Rasck, Ainsworth, suffered injuries to his eyes which partly disabled him for a time.

Dr. L. C. Albertson, for some years located at Axtell, has accepted a position as assistant physician in the Hospital for the Tuberculous at Kearney.

Dr. M. M. Campbell for some months stationed at the Ingleside State Hospital has accepted a position at the Hartford (Conn.) Neuro-Psychiatric Institute.

Dr. H. E. Mantor, for twenty-five years in practice at Sidney, has located at Broadwater and is opening hospital facilities for the accommodation of patrons.

The "Relation of the Doctor to Human Welfare" was the title of a discussion given by Dr. F. W. Heagey, Omaha, before the Caducean club, recently.

Dr. J. W. Hellwig was elected Chairman, and Dr. Donald J. Wilson was elected Secretary of the Omaha Dermatological Society at the annual meeting held April 3rd, 1934.

Dr. L. L. Huntley at present an interne in the Omaha Methodist Hospital is scheduled to go to Sierra Leone for a period of three years to do research work in tropical diseases.

The Sisters of St. Francis have acquired the new $110,000 hospital plant at North Platte and will at once equip it. It is understood that the transfer of the hospital plant to the Sisterhood is a gift and that in addition all the North Platte physicians have agreed to close their private hospitals and take all their work at the new hospital.

BOOKS RECEIVED

THE MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS, by John Albert Key, B. S., M. D., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes, Children's, and Jewish Hospitals, St. Louis and H. Earle Conwell, M. D., F. A. C. S., Orthopedic Surgeon for the Tennessee Coal, Iron and Railroad Co., Birmingham, Ala.; Orthopedic Chief of the Traumatic and Orthopedic Service of the Employees' Hospital, Fairfield, Ala.; Member of the Fracture Committee of the American College of Surgeons, and the Advisory Editorial Staff of the Journal of Bone and Joint Surgery. This Book has 1165 pages, with 1165 illustrations, 16 mo., cloth cover. Published by the C. V. Mosby Co., St. Louis, Mo. Price $15.00.

BOOKS REVIEWED

MEDICO-MILITARY SYMPOSIUM, 1934. Under the auspices of the Kansas City Southwest Clinical Society and the Medical Department of the Seventh Corps Area, U. S. Army. Brown-White Company, Kansas City, Mo. This volume contains abstracts of fifty lectures given at the March, 1934, clinics. All are of a very high order.

DERMATITIS DUE TO WOOD

Francis Eugene Senear, Chicago (*Journal A. M. A.*, Nov. 11, 1933), reports a case of dermatitis due to contact with the dust of yew wood. Dermatitis due to contact with woods or their dusts is relatively common. Woods of tropical origin are most often incriminated, but it is probable that woods of temperate climates give rise to reactions more often than is generally supposed. Eruptions may arise not only from direct contact, but also from proximity to certain trees and woods. The majority of cases are seen in those whose occupation furnishes contact with wood or their dusts, and this furnishes an important industrial health problem well recognized by various official bodies. The toxic agents are most commonly nonsaturated resinous acids in a free state or alkaloids, but other types of chemicals are responsible in some cases. Development of dermatitis may ensue after contact of from a few days to several years, but in general the eruptions appear after a contact of from a few days to a few weeks. Freshly cut wood is as a rule most toxic, but in a few instances the wood becomes more toxic on seasoning. A variety of clinical pictures may result from contact with woods, but the ususal reaction is an intense dermatitis venenata, often erysipelas-like, affecting the exposed parts. Perspiration and seborrhea increase the possibility of reaction. A number of symptoms due to involvement of other parts of the body, particularly the mucous membranes and the respiratory system may occur. In the case of some woods, tolerance may be established, but as a rule sensitivity once established is persistent. The cutaneous and general reactions may be regarded as an allergic reaction. The author reviews forest essence dermatitis, or wood cutters' eczema of France.

FOOD POISONING

J. C. Geiger and J. P. Gray, San Francisco (*Journal A. M. A.*, Sept. 23, 1933), define food poisoning as that clinical syndrome resulting from the ingestion of food contaminated by organisms of a specific type, including the paratyphoid-enteritidis groups and certain of the staphylococci.

They report on three outbreaks investigated by the San Francisco Department of Public Health. The first was believed to have been due to meat (beef) contaminated by Bacillus enteritidis; the second was caused, in all probability, by tomato sauce and turkey contaminated by Bacillus paratyphosus B; the third was probably due to a cream filling in chocolate eclairs, contaminated by a heavy yellow pigment-producing staphylococcus. The authors outline the investigative procedures, emphasizing the parts played by epidemiology and the laboratory. Practices carried out in San Francisco are compared with those of other major cities, as determined by questionnaire methods. The control of food poisoning is not an unachievable goal, but present-day methods must be more intensively and extensively applied. Three avenues of approach include: (1) supervision of food handlers (human carriers), (2) food inspection service (physical plant, methods of preparation, holding and serving and regulation of rodents and other animal carriers), and (3) health education through an organized program and personal contact of the department personnel and the public.

SURGICAL TREATMENT OF INTRACTABLE PAIN

Loyal Davis, Chicago (*Journal A. M. A.*, Dec. 16, 1933), states that visceral afferent painful impulses travel by way of the splanchnic nerves to the spinal cord and thence upward by relays of short neurons in the gray matter. Chordotomy, unless the lesion is deep and injures the gray matter, will not relieve visceral pain, although it will abolish intractable somatic pain. Posterior root section operations, in which a sufficiently large number of roots are severed, will abolish visceral pain. The pain of angina pectoris has been abolished by posterior root section. Such an operation definitely attacks the afferent pathway for the painful impulses and does not interfere with the cardiac accelerator mechanism. The stimulation of efferent sympathetic fibers produces changes in the periphery, which in turn stimulate the ordinary somatic afferent fibers that transmit pain. The relief of pain by section of sympathetic fibers is, therefore, based on the interruption of efferent pathways. Section of all the posterior roots that supply the upper extremity in man and in animals interrupts all form of superficial or deep sensation. There is no evidence of a sensory pathway through the anterior spinal roots.

ROSTER OF OFFICERS—1934

Adolph Sachs, Omaha, President	1933
Joseph Bixby, Geneva, President-elect	1934
George L. Pinney, Hastings	1935
William Shepherd, Rulo	1935
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1936
W. R. Boyer, Pawnee City, Chairman	1936
R. J. Lehnoff, Lincoln	1936
E. L. Brush, Norfolk	1936
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
E. G. Zimmerer, Chairman Medical Section	Lincoln
Morris Nielsen	Blair
W. J. Arrasmith, Chairman Surgical Section	Grand Island
J. W. Duncan	Omaha

ENTERTAINMENT COMMITTEE

Dr. Harry Taylor, Chairman	Lincoln
Dr. Chas. Arnold	Lincoln
Dr. Roy Whitham	Lincoln
Dr. A. D. Munger, Chairman Exhibitors	Lincoln
Dr. Harold Morgan	Lincoln
Dr. George Misko	Lincoln

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
A. E. Buchanon	Fremont
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XIX Norfolk, Nebraska, June, 1934 No. 6

CONTENTS

Page

The New Order — Our Medical Utopia, Joseph Bixby, M. D. 201

Congenital Heart Disease, George W. Covey, M. D., and J. Marshall Neely, M. D. 204

Fixation Position for Optimum Joint Function, Robert D. Schrock, M. D. 211

Treatment of Some Common Organic Neurologic Syndromes, A. E. Bennett, M. D. 215

Unusual Goitres, Max Emmert, M. D. 219

Pulmonary Abscess, Joseph Weinberg, M. D. 222

May Psychic Stimuli Produce Hay Fever?, O. C. Nickum, M. D. 224

Cholecystitis Due to Brucella Melitensis, E. L. MacQuiddy, M. D., and James W. Martin, M. S. 227

Page

EDITORIAL—

Reimbursement for Hospitals for Care of Indigent Injured in Automobile Accidents: The Ohio Law 228

The Fate of Transplanted Bone 231

Long Articles and Long Bibliographies 231

A. M. A. Convention, Cleveland, June 11-15 232

Shakes in Nebraska 232

A View Point on Socialized Medicine 232

Ordinary Mixed Diet, Best 233

Editorial Paragraphs 233

Obituary 235

Tuberculosis Abstracts 235

Auxiliary News Notes 236

The Societies 236

Human Interest Tales 237

THE NEW ORDER — OUR MEDICAL UTOPIA*

JOSEPH BIXBY, M. D.,

President, Nebraska State Medical Association,

Geneva, Nebraska.

We are on the threshold of a new era in medicine, as well as in social and economical life. We have passed from the period of the old family doctor, through the age of over-wrought specialism and over-manned clinics, the service of which was demanded by a reckless populace, with money, who were demanding accessories. not only, in medical service, but also, in every field. And now, a reaction from this artificial state is manifest in the discussion of the high cost of medical care, and the activity of various interests to socialize the practice of medicine.

The circumstances of the people have changed, and so, the practice of medicine must change. The problem, however. is not more difficult than some for which satisfactory solutions have been found in the past. The medical fraternity is resourceful and will be able to adjust itself to the new social order and need not fear the competition and activities of the interest which will seek to socialize the practice of medicine through altrustic, communistic, misguided or governmental leadership.

The situation calls for a constructive program —a program which will center around the personal private physician in the practice of medicine and the cooperation of all physicians in the organization.

The world and the circumstances of the people may change; but, the people, themselves, are much the same. They are dominated by the same emotions, ambitions and independence as in the past.

---

*Presidential Address delivered at the annual meeting, Nebraska State Medical Association, Lincoln, May 23, 1934.

In their emotional state they may, with false hope, be lured by corporate medicine or organized health or low cost medical groups, and by the mystics and magic of the unscientific, the charletan, the quack and the unethical practitioner; but when hope recedes, they will call, as in the past, for the solace which comes with the service of the private practitioner of medicine, who gives assurance with his scientific knowledge and hope with his human contact. Personality, which generates confidence, must and will remain a part of the practice of medicine.

As we cross the threshold of the new era in medicine let us go back to the beginning in planning our utopia—individualism in the practice of medicine and the brotherhood of man in the organization. In all forms of organized life there is the survival of the fittest, and so it is with men and in medicine.

The supply of medical men is greater than the demand, but the demand is for a supply of better medical men. This is answered by the fact that you will often see five practitioners in a community, with one doing three-fifths of the work. It is said that everyone should have his opportunity, but in the selection of our medical student body, would it not be better to determine the survival of the fittest in the pre-medic student stage? To fit the round block in the round hole and the square block in the square hole before the block becomes marred or perchance ruined and the public suffers from the imperfection.

Every student of medicine should be qualified with all of the basic principles underlying the practice of medicine and taught that he must know the physical, mental and emotional man in his entirety. In the practical stage of his education he should specialize in sociology and medical economics. When he enters the private practice of medicine he should continue his education, in order to deliver a satisfactory service.

Scientific medicine can no longer condone the unqualified and insufficient practitioner within its ranks. The practitioner must continue to be a student until the end. He should work on the superstructure as a general practitioner for many years or until, by experience and a storehouse full of knowledge, he has attained the position of master. Then, and then only, should he consider or be allowed to work on the inside finish and qualify as a specialist. With a profession composed of ninety per cent masters and ten per cent specialists what has the medical profession of America to fear about its place in the Sun. It will stand as a Satellite in the Firmament of any organized society.

In the organization of medicine let us apply the simple rule, and in order to have a well working machine, let us strip it of all accessories and go back to the original principle: The advancement of the science and art of medicine, and the betterment of public health, to act for the medical profession in respect to its material interest, professional, social political and economical.

The program will call for education, propaganda and a new order of service. The public must be further informed of what medicine contributed to civilization. What happiness, progress and well being it has brought to an otherwise distraught people. And, how the future progress and integrity of men and civilization still depends and always will depend on medical research and discovery, exemplyfied by the scientific physician stimulated by a desire to give to the world and to his fellow physicians, without stint or stain, the results of his labor. The unselfishness of the medical scientist is without parallel in the history of organized society.

The people must be given a definite program of instruction in matters of health, and taught how to co-operate with organized medicine and the individual practitioner to aid in establishing and maintaining an efficient and permanent public service.

The propaganda of the quack, the charlatan, and the unethical, and those who would socialize the practice of medicine must be met by ethical propaganda. The medical man must become advertising-minded. The public must be taught what the practice of medicine really is. With the great advance which has been made in scientific medicine and the ever increasing proficiency of the individual practitioner, and the watchful care of organized medicine to remove and guard the public from the medical pitfalls that constantly surround it the medical men surely have something to tell. Let them tell it!

In the new order of service the medical profession must bring to the public, both urban and rural, a uniform medical service of the master type. The irregularities and the insufficiencies of the past, wherein the patient has been subject to unnecessary examinations by the over zealous clinic and clinician, not so far perhaps as scientific research is concerned, but as an accessory to the higher cost of medical care. There are also the inefficiencies, perhaps, more often in the rural districts, on account of a larger and more diversified practice, isolation, faulty habits, and lack of confidence by not having all of the technical aids of diagnosis neglect examinations and technical treatments or refer too large a per cent of their cases to clinics or clinicians, thereby either forming neglect, or adding to the higher cost of medical care.

The rural practitioners must fill the gap that now exists and provide not only the personal qualifications but also the necessary equipment for such service. This can be done through organization and co-operation of the medical men in counties where laboratories with all of the technical aids in diagnosis and treatment may be provided, and where the rural man may overcome his isolation with more frequent meetings with his co-workers.

The commercialism, wherein the medical man in tune with the general orgy of the public in money madness has, in many instances, exceded the limit of propriety, and the thought of how much can be got out of a patient must be changed to how much can be given them for what they are able to pay. In return for this service the public conscience must be educated to know that this service is entitled to and must be recompensed, either by the individual or the state for the indigent who is entitled to medical care as well as food and shelter by organized society.

The ability of the public to pay for medical service is no less than their ability to pay for the other necessities of life, and is regulated by the general economic condition of society. But in the new order they must be educated to the economic requirement that the necessities of life must supercede the accessories.

In the new order the medical man will continue to dispense true medical charity. The abidingly honest will continue to keep their contracts whatever they may be. The state must take care of the indigent. Some plan of amortized financial credit must be provided for the individual of the medium and low income group. The slogan must be that the medical man is worthy of his hire.

Then with the new master service giving to the public the most service for what the public can afford to pay, there will be in the private practice of medicine of the future an economic balance, which will supply to the public its medical need and afford to the medical man the necessities and comforts of life.

The new deal—The Medical Utopia—can not be brought about without organization. The bulwarks of organized scientific medicine are surrounded on every side; the enemy is battling at its doors, while within its ranks there are traitors and chiselers of the most unscrupulous type. Yet organized medicine will withstand, as in the past, the invasion of any and all of the pests and parasites which would lead a credulous public from its benefactor. Scientific medicine will continue. As Justice Charles Loring of the Minnesota Supreme Court has said "There is no place for the middleman." Scientific medicine must be direct and guided by a personal contact.

The responsibility for the preservation of scientific medicine and the welfare of the private practitioner in Nebraska must be assumed by the Nebraska State Medical Association, which has prospered by a virile and unselfish leadership. By its own efforts, and under the guidance of the American Medical Association many worthy and progressive battles have been fought. An example of which is the Constructive and Protective Basic Science measure, now a law of the State of Nebraska.

The future progress of this organization calls for a constructive program on the part of the responsible officers, and a strengthening of its membership. The County units must be filled and trained. The future accomplishments of organized scientific medicine in educating the public, and protecting them from the "Big Bad Wolf" will depend on their unselfish service, energy, intelligence and solidarity.

Within the membership the jealousness and personal propaganda of the past must be changed to a policy of tolerance, charity and commendation for the efforts of others. The real competition of the future will come from without; while, within the Golden Rule should apply. And, as, the unconscious effect of the broad mantle of charity is thrown around the prodigal, those who have erred will be gradually returned to their proper standing.

In its endeavor organized medicine is not alone. It has many allies, among whom is the Woman's Auxilliary, who are working in selfless devotion, loyalty and consideration for the principle of organized medicine, and for the education and welfare of the public; without thought of reward save the accomplishment of high purpose.

THE SKIN THAT WILL COME OFF

According to the medicos, blond sunbathers blister very easily. So it appears that blisters as well as misters prefer blondes. — Philadelphia Ledger.

CONGENITAL HEART DISEASE*

REPORT OF THREE CASES

GEORGE W. COVEY, M. D., and J. MARSHALL NEELY, M. D.,
Lincoln, Nebraska.

The following three cases of congenital heart disease are based on complete autopsy studies, two of them done by one of us in Lincoln, and the third done by one of us while resident in pathology at Ancker Hospital, St. Paul, Minnesota.

The first case, (Baby boy G.), was attended by Dr. Harry A. Taylor of Lincoln, who furnished the clinical data given below and through whose courtesy we are permitted to use it. The second case, (Ruth Irene R.) was attended by Dr. E. B. Finney of Lincoln, who furnished the clinical notes and his kind permission to use them. Permission to use the material and clinical data on the third case was kindly granted by Dr. John F. Noble, Pathologist at Ancker Hospital.

Congenital heart disease is, in many respects uninteresting from the clinical standpoint. This is probably due to the fact that accuracy of diagnosis beyond the knowledge that we are dealing with this type of heart disease, is very difficult; and further that having made a diagnosis, one feels the therapeutic hopelessness of the situation. On the other hand, more study of these hearts, particularly from the standpoint of pathogenesis may lead to greater accuracy of diagnosis and prognosis; and the outlook may be more hopeful than in some of the acquired lesions such as mitral stenosis and myocardial fibrosis.

In the study of these three cases, emphasis is placed on the pathology present, its origin and time and manner of development in foetal life. Accordingly it would not seem out of place to very briefly review the steps of development of the heart before presenting the cases.

While the embryo is still spread out on the yolk sac, two tubes form from the visceral layer of the mesoblast, one on each side, and project into the body cavity. Each of these differentiates into an outer myocardial layer and an inner endocardial layer. The heart tubes meet, in the midline at the time the gut tube begins to constrict. First the myocardial and later the endocardial layers fuse. At this time when the anlage has become a single tube, venous blood enters posteriorly into the sinus venosus, and escapes anteriorly through the truncus arteriosus.

Soon, due to elongation, this tube assumes an "S" shape and begins to rotate, assuming a position so that the venous end is below and to the left and the arterial end above and to the right. At this time the intermediate portion of the heart, extends first downward then obliquely upward and to the left. At about this stage the venous, arterial, and ventricular segments can be recognized. With still further rotation the venous segment assumes a position above and behind, and the primitive ventricle comes to lie in front and below. At the completion of rotation a groove forms between the venous segment or what is now the primitive atrium, and the ventricular segment or the primitive ventricle. Thus the common atrial, or, atrioventricular canal is formed. About this time outpouchings from the primitive atrium, the primary auricular appendages, grow to enormous proportions enveloping the truncus arteriosus and overlying the ventricle.

A longitudinal groove now appears centrally on the primitive ventricle, indicating beginning formation of the interventricular septum, and separation of the two ventricles. Frontal sections of the heart of an embryo thirty days of age (10 mm.) shows this beginning separation of the heart into right and left chambers.

The subdivision of the atrium precedes the sub-division of the ventricle, beginning as an extension of the cresentic fold, the septum primum. This grows toward the atrial-ventricular canal from the posterior superior wall of the atrium. It meets the septum intermedium which has been formed within the atrial canal by local thickenings of the anterior and posterior lips, the so-called endocardial cushions. However, before the septum primum joins the septum intermedium, an opening appears in its upper portion, the "Foramen Ovale." A little later a crescentic projection begins to form from the posterior inferior wall of the primitive ventricle. This, the beginning interventricular septum, corresponds externally with the interventricular groove, previously mentioned, and grows upward to meet the septum intermedium. The superior anterior portion of this partition, however, is incomplete until joined by the down growth of the aortic septum. The latter is formed within the bulbus arteriosis and grows downward to meet and complete this portion of the interventricular septum. It constitutes the "Pars Membranacea" in the fully developed heart.

---

*Read before the Lancaster County Medical Society, Lincoln, Nebraska, on November 21, 1933.

Rapid increase in the size of the atria causes the sinus venosus to be gradually absorbed into the right atrium causing the superior vena cava to drain into the cephalic wall and the inferior vena cava into the caudal wall. Prior to this change the opening of the sinus venosus into the atrium was guarded by a right and a left valve. As development procedes the right valve units with the septum primum and the left valve with the septum secundum. The right valve also later forms the eustachean valve and the thebesian valve.

The septum secundum originates as a crescentic ridge from the anterior superior wall of the right atrium and, lying close to and to the right of the septum primum grows posteriorly to form the anterior margin of the above mentioned foramen ovale. Before the advancing margins of the septum primum and septum secundum meet the right and left atria communicate by the space between these two septae. This is known as the interatrial foramen or the ostium primum.

Two pulmonary veins arise from each lung and, forming a single truck, enter the left atrium very near the interatrial septum, or at this time the septum primum. This entrance is normally on the left side of the septum. With growth of the heart the wall of this common trunk is drawn into the left atrial wall so that finally there are four veins opening into the left atrium.

The mitral and tricuspid valves are formed from the endocardial cushions or thickenings of the spongy muscle wall of the atrio-ventricular canal. The chordae tendeniae are formed from muscle bundles attached to these cushions.

When the embryo is 5 mm. in length, there are four longitudinal thickenings which form distally and two proximally in the aortic bulb. Two of the distal thickenings which lie on the right and left side of the bulbus meet and fuse, dividing the bulbus arteriosus into a dorsally placed aorta and a ventrally placed pulmonary trunk. Proximally, these thickenings now hollow out to form the primitive semilunar valves. The two proximal swellings now fuse and extend the division of the bulb towards the interventricular septum. As this division occurs there is a clockwise rotation which places the base of the pulmonary artery so that it opens into the right ventricle and the base of the aorta so that it opens into the left ventricle.

Thus it is seen that there are two septae formed which divide the heart into right and left chambers. One, the interatrial septum is formed by the septum primum, the septum secundum, and the septum intermedium. The other, the interventricular septum is formed by the union of a cresentic fold inferiorly and the downward growth of the septum of the truncus arteriosus superiorly.

Classification of congenital cardiac anomalies is difficult because there are usually several associated anomalous conditions in the same heart. It is often impossible to say positively which of these is primary and which are associated lesions.

Dr. Maude E. Abbott(1), curator of the medical museum in McGill University, has written extensively on this subject. She places 631 cases into 23 main groups and states "The most logical arrangement is undoubtedly one based upon the stage of development at which the defect has occured, differentiating those cases due to arrest of growth from those originating at a period of intra-uterine life and apparently caused by fetal disease. Our knowledge of the development of the heart is still too limited to permit of a complete classification on this basis and, on the other hand, the etiology of a given condition is often impossible to decide in the individual case. Moreover, a grouping based on development alone is sometimes impractical for widely different pathological results may ensue from arrest of different parts of the heart at about the same period of fetal life."

Dr. C. W. M. Poynter(2), in 1919, reviewed 886 cases from the literature. After discussing the various classifications he comes to the same conclusion as Dr. Abbott, that these cases must be classified, "On mixed principles." Poynter's classification includes eleven main headings, but is essentially the same as that of Abbott, some of her main groups being subgroups in his arrangement. Poynter's classification follows:

- I. Malformations about the heart.
  - A. Anomalies of the pericardium.
    - 1. Deficiency.
    - 2. Diverticulum.
  - B. Misplacements of the heart.
    - 1. Internal.
      - a. Within the chest (dextrocardia).
      - b. Within the abdomen.
      - c. Diverticulum.
    - 2. External (Ectopia cordis).
      - a. Cervical.
      - b. Pectoral.
      - c. Abdominal.
- II. Anomalies of the heart as a whole.
  - A. Acardia.
  - B. Bifid apex.
  - C. Congenital hypertrophy.
- III. Anomalies of the cardiac septae.
  - A. Interventricular septum.
    - 1. Absence of septum.
    - 2. Defective at base.

LIBRARY OF THE

a. Below aorta.
b. Pars membranacea.
c. Elsewhere than base.
B. Interatrial septum.
1. Absence of septum.
2. Anomalies of septum primum.
3. Anomalities of septum secundum.
a. Persistent foramen ovale.
b. Other anomalies.
IV. Abnormalities within the cavities of the heart.
A. Right atrium.
1. Contracture or dilatation.
2. Accessory septa.
B. Left atrium.
1. Contracture or dilatation.
2. Accessory septa.
C. Right ventricle.
1. Absence or contracture.
2. Accessory septa.
D. Left ventricle.
1. Absence or contracture.
2. Accessory septa.
V. Abnormalities of the truncus communis arteriosus.
A. Persistence of the Truncus.
B. Defective aortic septum.
C. Deviation of the aortic septum (transposition).
1. Simple transposition.
2. Transposition in situs transversus.
3. Transposition of ventricular loop.
D. Aorta opening from both ventricles.
E. Aorta from right ventricle without transposition.
VI. Abnormalities of the Aorta.
A. Aortic stenosis.
1. Of orifice.
2. Of trunk.
B. Aortic atresia.
VII. Abnormalities of pulmonary trunk.
A. Pulmonary stenosis.
1. Of orifice.
2. Of trunk.
B. Pulmonary atresia.
1. Of orifice.
2. Of trunk.
3. Absence of trunk.
VIII. Anomalies of the semilunar valves.
A. Pulmonary valves.
B. Aortic valves.
IX. Anomalies of the atrio-ventricular openings.
X. Anomalies of the ductus arteriosus
(Persistent patency).
XI. Anomalies of the veins entering the heart.
A. Pulmonary veins.
B. Systemic veins.

Following this classification and brief resume of the embryology of the heart. an attempt will be made, in each of our cases, to trace the anomaly back through the cycle of development and to explain the pathologic physiology which results. Each case will be considered separately.

CASE I

CLINICAL DATA

Baby boy G. was born June 5, 1933, at 12:10 p. m. and was full term. The mother was a primipara, aged 20 years. The weight and measurements were as follows: Weight 3360 gm.; length, 51.25 cm.; head, 31.8 cm.; chest, 31.25 cm.; abdomen, 25 cm. The child breathed well and cried spontaneously. The patient seemed perfectly normal throughout the day but early the following morning a moderate, generalized cyanosis developed. Oxygen and carbon dioxide were given at once with practically no effect on the cyanosis. There were no convulsive movements, spasticity, or any other signs suggestive of intracranial lesion.

Physical examination at this time showed a regular but rapid respiration (rate 70 per minute) without dyspnoea. The lungs were apparently totally expanded and no moisture was heard. Percussion did reveal a dullness extending upward and to the left from the cardia area. It was thought that this might be a persistent thymus. The heart rate was 180 per minute, the sounds were clear and there was no arrythmia. The abdomen and extremities were not remarkable.

Two hours after the first symptoms were noticed the cyanosis became extreme and there was sudden collapse. The baby was then placed in the Drinker Respirator with re-establishment of respiration but very little improvement of the cyanosis. A cisternal puncture was made at this time and a pressure of 8 mm. Hg was found. About 4 c.c. of yellowish thin fluid was removed. 20 c.c. of whole blood was given intramuscularly and subcutaneously. At this time the lung and heart findings were unchanged.

About one hour later the condition seemed unchanged. No dyspnoea was apparent but upon auscultation the lungs were found to be full of fine crackling rales, suggesting an edema. The baby was held by the feet, inverted, and one-half to three-fourths ounce of yellowish fluid ran from the nose and mouth. Soon after this the above mentioned rales had disappeared from the chest. The baby was seen again at 4:30 p. m. when its condition was unchanged. A few minutes later sudden death occurred. The highest temperature recorded was one hour before death, at which time it was 101.6 degrees F.

ABSTRACT OF AUTOPSY—BABY BOY G.
MUSEUM NO. 826

The body was examined at autopsy thirty minutes after death. There was nothing remarkable about the external appearances. The child was well developed and 52.5 cm. in length.

On opening the thorax a very large heart was the outstanding feature. It measured 5.5 cm. in transverse diameter, the diameter of the chest being 9.8 cm. at the level of the heart's apex. The pericardium contained only 5 c.c. of fluid. A few petechial hemorrhages were noted under the epicardium near the apex of the heart. A few were seen also in the thymus gland. The vessels over the heart and aorta were markedly distended with blood.

Examination of the heart showed the right atrium to be markedly dilated. The foramen ovale was well protected by a flap almost closing it. The tricuspid valve was relatively large, being 4.4 cm. in circumference. The left atrium was very small, not more than one-fifth the capacity of the right. The right ventricle was enormously dilated and its wall hypertrophied, being 1 cm. thick. The conus opened into a normal appearing though somewhat large, pulmonary artery having three normal cusps. As this artery proceeded upward it gave off a branch first to the right lung, then slightly higher, one to the left lung. It then passed on upward, maintaining the same size, forming an arch quite comparable to the normal aortic arch excepting there were no branches from it to the head and the upper extremities. This arch turned downward to form the thoracic and abdominal aorta and from the point where the descending limb of the arch became the thoracic aorta normal branches occurred.

From the right posterior aspect of this arch a single branch was given off that lead backward and downward and to the right. It gradually crossed to the left behind the pulmonary artery to the level of the origin of the latter where it divided into two branches, the right and left coronary arteries. It did not connect with the heart in any other manner. From this artery, in its upper half, three vessels arose and passed upward. They were found to correspond in their distribution to the innominate, left common carotid and the left sub-clavian arteries. (See fig. 1).

In the cardiac end of this rudimentary aorta, where the coronary arteries arose, nothing could be seen resembling the cusps of the aortic valve and no opening other than those leading into the two coronary arteries were present. The size of this vessel at its maximum was not more than one-fifth that of the pulmonary artery. A thin broom straw could just be passed through the lumen of the lower centimeter of it.

The mitral valve admitted the tip of a large hemostat. Its leaflets were quite normal. It opened into a left ventricle which was very rudimentary having a capacity of not over one cubic centimeter. This

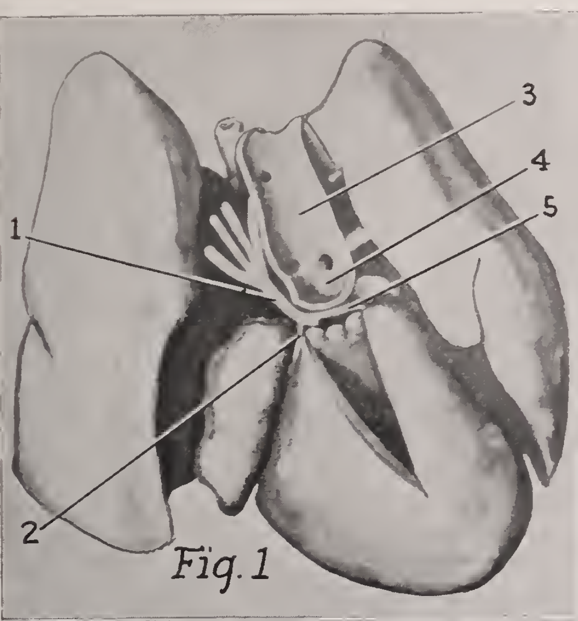


Fig. 1

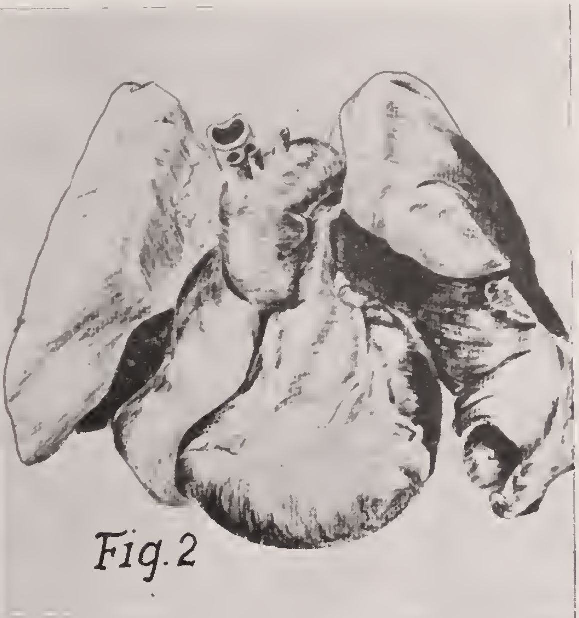


Fig. 2

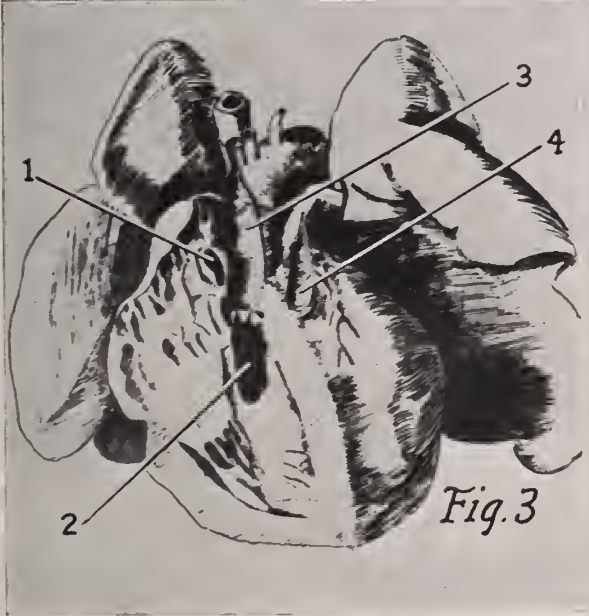


Fig. 3

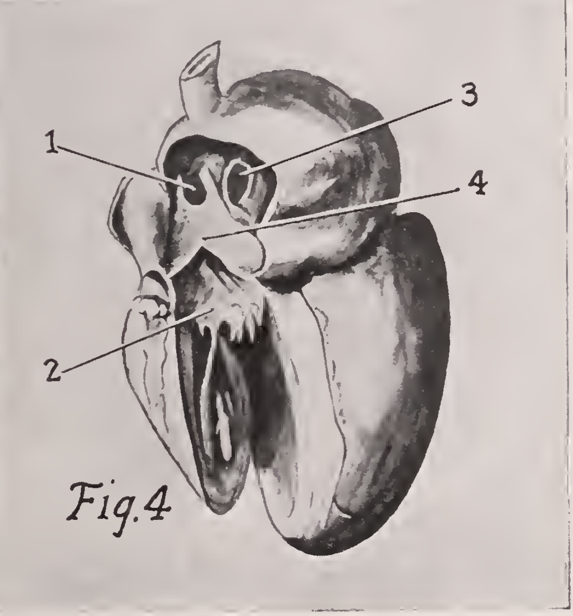


Fig. 4

Fig. 1—Case No. I. Drawing (semi-diagramatic) of heart and great vessels. The pulmonary artery and ductus arteriosus are laid open and a segment cut from the ventral wall of right ventricle. A segment has been removed from the pulmonary artery just above the valve to show the blind ending of the aorta lying behind it. 1. Aorta. 2. Right coronary artery. 3. Ductus arteriosus. 4. Pulmonary artery. 5. Left coronary artery.

Fig. 2—Case No. II. Drawing of heart and lungs, anterior view, to show the anatomical arrangement and comparative size of the great vessels.

Fig. 3—Case No. II. A drawing (semi-diagramatic) to show anamolies. A segment has been removed from the anterior wall of right atrium and ventricle with two leaflets of the tricuspid valve. 1. Potent foramen ovale. 2. Defect in membranous portion of interventricular septum. 3. Aorta with window removed from ventral wall showing its right-lying position, the orifice being astride the defect in septum. 4. Pulmonary artery with window cut out showing its blind end, not connecting with the heart cavities.

Fig. 4—Case No. III. Semi-diagramatic drawing. Heart opened so that one is looking into the left atrium and ventricle from the left posterior. 1. Patent foramen ovale in the anomalous septum. 2. Anterior leaflet of mitral valve. 3. Ostium primum (note relationship of lower limb of anterior margin to lower limb of posterior margin—see text). 4. Anomalous septum (septum primum).

ventricle had a rather thick, white endocardium and there was no opening from it. A shallow dimple was present at the point at which one would expect the aorta to arise from this cavity. The interventricular septum was complete.

Otherwise the postmortem showed no remarkable findings.

We have, then, a heart composed essentially of three chambers, two atria and one ventricle, the right. The left ventricle, though present, is rudimentary and obviously functionless, and the communication between the two atria so nearly closed that the flap must have interposed considerable obstruction to the passage of blood from the left to the right atrium.

A single large vessel leaves the heart, taking origin from the conus of the right ventricle precisely as the pulmonary artery should do, but maintains a position ventral to the vessel which must be analagous to the aorta, proceeds cephalad and, after giving off a branch to each lung, becomes the aortic arch. Instead of receiving the ductus arteriosus in its concave lower border, as a prolongation upward of the pulmonary artery, the arch gives off a vessel from its dorsal surface as a communication with the small rudimentary aorta. This latter vessel is positively identified by its branches to the head and arms and its termination below in the coronary arteries.

Obviously the aortic septum has been incomplete. However, the usual rotation of these vessels a half turn to the left which normally reverses the relative positions of the aorta and pulmonary artery as they lie at their origin, has taken place. These abnormalities must have caused the following physiologic changes:

1. Marked obstruction of return flow from the lungs.
2. Admixture of venous and arterial blood and redistribution of this poorly oxygenated blood to both pulmonary and systemic systems.
3. Relatively very poor blood supply to the head and upper extremities.

If we examine the data on this case in the light of Poynter's classification we find the following classes represented:

IV-A-1—Dilated right atrium.
III-B-3-a—Patent foramen ovale (almost closed).
IV-B-1—Contracted left atrium.
IV-D-1—Markedly contracted (hypoplastic) left ventricle.
VII-B—Artesia of aorta.
V-B—Defective aortic septum.

The numerals placed before these items show their position in the classification given above. It is obvious that this in no way classifies the heart we are examining. Reference to the embryologic data given above shows what happened to produce the above abnormalities, hence indicates that this heart actually belongs in class VII-B, atresia of the aorta, and we need only to add group X, or persistent patency of the ductus arteriosus.

The primary anomaly, and the one which was probably responsible for all the other changes described above, was developemental defect of the septum of the truncus arteriosus which, in the early weeks of fetal life, divides this trunk spirally into the two vessels known as aorta and pulmonary artery. This septal defect produced the atresia of the aorta and all the other findings are presumably secondary. The failure of the foramen ovale to remain open and permit sufficient admixture of oxygenated blood to the systemic circulation led to the early death of the baby.

CASE II

CLINICAL DATA

The case is that of a white female child, (Ruth Irene R.), age seven months and one day. Death occurred October 10, 1931, and the autopsy was performed the following day. This patient was the fifteenth child of strong, healthy German parents. The previous pregnancies were normal and the other children were all alive and well.

This child was cyanotic at the time of birth and resuscitation was difficult. She was first seen by Dr. E. B. Finney on May 30, 1931, when about seven weeks old, because she had never nursed well, had gained no weight and cyanosis had persisted since birth. At this time the doctor noted a peculiar heart murmur. This murmur was described as a continuous purring sound which totally obscured all other heart sounds. A thrill was noted coincident in the heart cycle with the murmur. Moving the child seemed to cause distress or actual pain and she could never nurse well presumably because of dyspnoea. On July 2, an x-ray showed little beyond a large heart of unusual shape. She was somewhat less cyanotic. Death occurred October 10, 1931, at six p. m.

SUMMARY

The outstanding clinical features of the case were, cyanosis from birth to death, seven months later; difficulty in breathing aggravated by moving her about, nursing, etc.; failure to gain weight; a peculiar continuous purring sound over the heart, which obscured all other heart sounds, and which was accompanied by a thrill. The clinical diagnosis was congenital heart disease.

ABSTRACT OF AUTOPSY PROTOCOL, RUTH IRENE R. MUSEUM NO.

Autopsy was done October 11, 1931, at 9 a. m. Examination was limited to the chest. External examination disclosed a female child measuring 60 cm. in length. The head was oddly shaped, and measured 36.6 cm. in circumference. The chest measured 35.9 cm. in circumference. The anterior fontanel was large and depressed and the posterior fontanel was still open.

On opening the thorax, the right lung was seen to reach the mid-line anteriorly while the left was obscured by the large heart. There was a slight effusion in the pericardial sac, and a few subepicardial petechial hemorrhages are noted over the anterior surface of the heart. The heart was lying transversely, the enormously dilated right atrium forming the entire right margin. The enlarged ventricles on the other hand formed the left border. The aorta was very large and the pulmonary artery was very small. (See figs. 2 and 3).

On opening the right atrium the foramen ovale was found to be patent and very large. The left atrium was very rudimentary amounting only to a common point of opening for the pulmonary veins and had a very small auricular appendage.

The right ventricle was very large and had a thick wall. The whole membranous portion of the interventricular septum was absent whereas the muscular part was complete and normal in appearance. The left ventricle was a very small chamber with a relatively thin wall. The mitral and tricuspid valves were normal in appearance.

The aorta opened from both ventricles, its ring being astride the deficient area in the interventricular septum, a typical "Rechtsclage" of the aorta. Its valve was normal and the coronary arteries arose from it in the usual manner. The pulmonary artery began just above the usual level of the pulmonary valve, there being no connection between it and the conus which was very poorly developed. There was nothing suggestive of adherent leaflets in the blind end of this vessel; it apparently never did connect with the heart. The relationship between the positions of the two vessels was normal, and the pulmonary artery divided into two branches, one to each lung. A fibrous cord represented the remnant of the ductus arteriosus and a dimple in the aortic wall remained at the aortic end of this obliterated artery.

Apparently the blood supply to the lungs was entirely by way of the bronchial arteries. Aside from the above the only thing of note was hemorrhagic infarction of the lungs.

This case represents a further step in cardiac malformation than the so-called "Tetrology of Fallot" which consists of pulmonary stenosis (not atresia), defective interventricular septum, right ventricular hypertrophy and "Rechtslage" of the aorta.

Reference to the findings in the second case show that they fall likewise into several of the groups, III, IV, V and VI and several subheadings, but here also it is evident that the primary developmental fault is not a dilated right atrium, a patent foramen ovale, defective interventricular septum, etc. but atresia of the pulmonary artery, because of this we have the rightlying aorta, receiving blood from both ventricles. The defective interventricular septum permits this to occur and the patent foramen ovale facilitates passage of the oxygenated blood from the left to the right side of the heart. Had the ductus arteriosus also remained patient this child might well have survived much longer.

CASE III
CLINICAL DATA

The third and last case is that of a male infant, age four and one-half months, admitted to the hospital December 17, 1931, complaining of inability to take nourishment probably due to shortness of breath.

The past history reveals a normal delivery. The mother stated that the patient had "jaundice" for a period of four weeks after birth. At the end of this time the icterus disappeared. Following this the patient failed to gain weight properly because he regurgitated food.

Physical examination disclosed a rather poorly nourished white male infant. The skin was pale and all of the superficial veins were prominent. There was a serous discharge from the nose and the pharynx is moderately injected. The sternum was prominent and seemingly displaced anteriorly. The entire thorax was fixed on respiration, which was almost entirely abdominal in character. Examination of the heart revealed dullness over the entire precordium extending 3 cm. to the right of the sternum and 2 cm. beyond the left mid-clavicular line. A loud systolic and diastolic bruit was heard over the entire precordium. There was a moderate clubbing of the fingers and cyanosis of the finger tips.

There were no significant laboratory findings. X-ray examination showed a globular shaped heart, with considerable enlargement to the right, suggesting congenital heart disease. The patient's dyspnoea and cyanosis became progressively worse and he died December 20, three days after admission.

PROTOCOL OF POSTMORTEM, BABY R. J. A-31-421

The body was that of a male infant measuring 60 cm. in length and weighing 4620 gms. The sternum was more prominent than normal and the abdomen seemed somewhat distended.

On opening the abdomen there was a slight excess of fluid present in the peritoneal cavity. Nothing else remarkable was seen.

On opening the thorax both lungs were found to be free and both pleural cavities empty. The pericardium showed no excess fluid and the surfaces were smooth. The transverse diameter of the heart was 9 cm.

The heart weighed 80 gms. On opening the heart the right atrium and ventricle were found to be markedly dilated and hypertrophied. The right atrial wall was 4 mm. in thickness and the right ventricular wall was 1 cm. in thickness. The papillary muscles were enormously hypertrophied. The cavity of the left ventricle was very small. The left ventricular walls were about 0.5 cm. in thickness. The mitral, tricuspid, pulmonary and aortic valves were normal in appearance. Both coronary openings were normal. Examination of the great vessels showed the pulmonary artery to be much larger than the aorta. The ductus arteriosus was closed and both aorta and pulmonary artery followed a normal course.

The capacity of the left atrium was small. This chamber was completely divided into two compartments by a rather thick fibrous septum. (See fig. 4). This septum was obliquely situated so that the left margin of it was firmly attached to the left wall of the atrium just caudad to the entrance of the pulmonary veins, and the right edge was firmly attached to the interatrial septum. The dorsal edge of this septum was firmly adherent to the left posterior atrial wall. The anterior or ventral margin was firmly attached to the superior ventral wall of the atrium. Near the anterior margin of the septum there is an opening, the edges of which were rounded and smooth. This opening measured about 4 mm. in diameter.

Through the interatrial septum there was a large opening, 2 cm. in diameter, located ventrally. This aperature was bounded posteriorly by a crescentic fold growing ventrally from the dorsal wall to meet a similar but less well developed fold extending from the ventral or anterior wall. The limbs of the posterior fold lay to the right of the limbs of the anterior fold.

The remainder of the postmortem showed little of significance save for chronic passive congestion of the lungs and liver.

TO SUMMARIZE:

The case represents one in which the left atrium is completely divided into two compartments by an oblique thickened septum. The only communication between the left atrium and the left ventricle is a small opening in this septum. The upper compartment communicates with the right atrium by a large opening in the atrial septum, and received the blood from the pulmonary veins.

Physiologically, the effect is the same as a severe grade of mitral stenosis, partially compensated by the large orifice in the interatrial septum. This explains the reason why the left atrium is not dilated.

The divisions of Poynter's classification under which this case falls are as follows:

III-B-2—Anomalies of septum primum.

IV-B-2—Accessory septae.

Ranson(3) describes a similar case found in a healthy negro dead of asphyxia. However, in his case the septum was perforated allowing blood to pass freely from the left atrium to the left ventricle. Ranson supports Fowler who believed that the septum resulted from an overgrowth of the valve of the foramen ovale which is then carried into the left atrium and becomes adherent to the walls.

Griffith(4) described an incomplete fibrous septum in the left atrium and in his case the foramen ovale was also closed. Stoeber(9) described a case very similar to this save for the fact that there was no opening present in the septum dividing the left atrium into two compartments. William and Abrikossoff(10) described a case similar in every respect to our third case. They believe that the septum represents a displacement of the septum primum caused by incorporation of the common pulmonary vein too far to the right so that it enters the atrium at the site of the attachment of the septum primum. The other theory which is advanced in the literature to explain anomalous septae of the left atrium is that there is an overgrowth of the valve of the foramen ovale which becomes attached to the wall of the left atrium by the constant flow of blood from the right to left, through the foramen ovale. This theory is not well supported.

To reconstruct the events occurring in the fetal development to produce this anomaly there is evidence to support the following: The common pulmonary vein, as it joins the heart, instead of entering to the left of the septum primum, entered just to the right of it. Blood then flowing into the heart from the lungs constantly tended to force this septum primum downward and to the left. At the same time the right valve of the sinus venosus which normally atrophies, and only aids in the formation of the interatrial septum by uniting with the septum primum, persists and forms the entire posterior portion of the interatrial septum. This remains after displacement of the septum primum. The septum secundum which has failed to reach the septum primum before its displacement persists and forms the anterior margin of the large opening in the interatrial septum. This large orifice then in reality, is the ostium primum. The foramen ovale is represented by the small opening present in the anterior margin of the anomalous septum dividing the left atrium. That the interatrial septum is composed of the right valve of the sinus venosus and the septum secundum is supported by the following anatomical fact: The limb of the crescent-shaped membrane located anteriorly which normally lies to the right of the septum primum, in this case lies to the left of the membrane taking the place of the septum primum, the right valve of the sinus venosus.

SUMMARY

Three cases of congenital anomalies of the heart are presented, as follow:

(1) Baby boy G., normal at birth, developed generalized cyanosis when eighteen hours old and died about ten hours later. At autopsy atresia of the aorta above the heart with no connection with the heart was found. This was accompanied by patent ductus arteriosus, hypoplasia of the left ventricle and slightly patent foramen ovale.

(2) A baby girl, cyanotic from birth, dyspnoeic, malnourished, died at the age of seven months and one day. At autopsy atresia of the pulmonary artery with no connection between it and the right ventricle was found. This was accompanied by "Rechtslage" of the aorta and absence of the membranous portion of the interventricular septum and patent foramen ovale.

(3) A baby boy, age 4½ months showed dyspnoea, cyanosis and clubbing of the fingers. At autopsy, a septum was found dividing the left atrium into upper and lower compartments. There was a small opening, the foramen ovale, through this septum. This had the effect of a severe mitral stenosis. There was also a large communication between the atria, a persistent ostium primum.

CONCLUSIONS

These cases bear out to some extent the contention that in congenital heart disease where several anomalies coexist, some one of these anomalies is the primary fault and the others, a response in the nature of compensation.

BIBLIOGRAPHY

1. Abbott, Dr. Maude E.: Modern Medicine, Osler and McCrae, 1915, pp. 323-448.

2. Poynter, C. W. M.: Congenital Anomalies of the Heart, University Studies, Vol. XIX, Nos. 1-2, Jan.-Apr., 1919.

3. Potter, Peter B., and Ranson, Walter S.: A

Heart Presenting a Septum Across the Left Auricle. J. Anat. and Physiol. 39:69 (October) 1904.

4. Griffith, Wardrop T.: Note on a second example of Division of the cavity of the left Auricle into two compartments by a fibrous band. J. Anat. and Physiol. 37:255, 1903.

5. Fowler, J. K.: Membranous Band in the Left Auricle. Tr. Path. Soc., London, 33:77, 1882.

6. Church, W. S.: Congenital Malformation of Heart: Abnormal Septum in Left Auricle. Tr. Path. Soc., 19:188; 1868.

7. Rolleston, H. D.: Malformation of the Heart, Pediatria, 4:108-112 (July) 1897.

8. Papillon, G. E., et Sachard: An Malie do la Grand Valve de L'orifice Mitral. Bull. Soc. Anat., Anne 72, p. 556.

9. Stoeber, H.: Einweiter Fall von Cor Triatriatum Mit Eigenartig Gekeenzter Mundung der Lungenvenen. Virchow Arch., Bd. 193, p. 252, 1908.

10. Williams, W., and Abrekossoff: Ein Herz mit Linkem Doppelvorhofe. Virchow Arch., Bd. 203, p. 404, 1911.

FIXATION POSITION FOR OPTIMUM JOINT FUNCTION*

ROBERT D. SCHROCK, M. D.,
Omaha, Nebraska.

Function is an expression of the usefulness of an organism. The efficiency of an individual organism is the result of effective functioning of the component organs. Disease, injury, fatigue, faulty nutrition and faulty mechanics are factors in depressed or subnormal function. Elements decreasing function are pain, incoordination or muscle imbalance, muscle weakness, instability of joints and adverse working position.

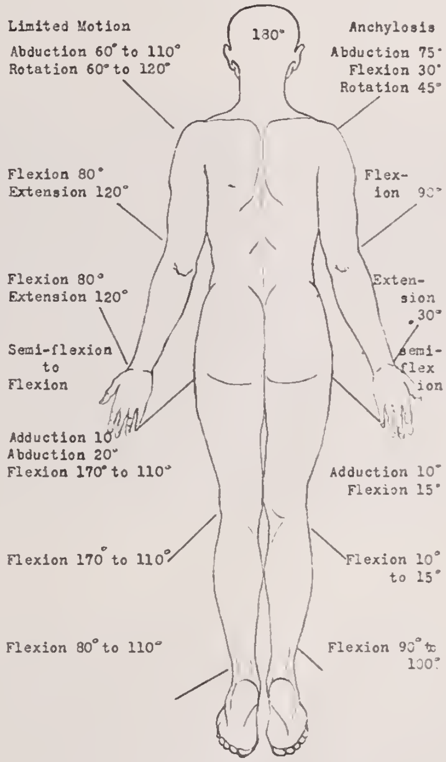
The purpose of this paper is to discuss ways and means for the best utilization of this sub-normal function. Normal function implies activity without consciousness, except for voluntary direction toward a particular purpose.

Man, having through considerable tribulation, become a biped, functions best with an erect spinal column—curved in the lateral plane for purposes of elasticity. When altered by injury, disease, poor posture or advancing years, the tendency is always toward forward flexion of the spine, and with this occurs decreased mobility.

In general, injuries of the spine and inflammatory disease are healed by producing bony bridges from the damaged areas to the more normal ones. When the area affected becomes rigid, pain disappears. Function is less decreased when good alinement is maintained. In certain injuries and certain diseases, nature is aided surgically to more rapidly produce the bony bridging. Stability is obtained while weight bearing lines are still good.

In the low back; i.e., lumbo-sacral and sacroiliac regions, architectural weakness occurs in one out of ten supposedly normal individuals. Undue strain at unsuitable employment or unusual activity may produce a mechanical break-down, giving rise to pain and weakness as elements in dysfunction. The pain is manifestation of strain. Strain must then be relieved by rest, adaptation of the individual to suitable employment, or by strengthening of this weak area by support applied externally in the form of a jacket, or applied internally by producing a firmer bony structure. This sacrifices local mobility for increased stability. Pain from mechanical strain is overcome, and durability is added to the part.

Positions of Fixations
for



Consideration being had for:
Age, Social status, Occupation, Cause of Disability.

In the shoulder girdle, the greatest disabilities are due to lack of abduction of the upper extremity from the trunk. Consequent to fractures of the humeral (glenoid) head, neck or greater tuberosity, loss of abduction is most discouraging. This is preventable by the early fixation in abduction or by early active abduction exercises. Inflammatory conditions in and about the shoulder joint demand the same position. The paralysis of deltoid muscle may be partially compensated for by transplantation of available good triceps and long head of the biceps (Ober). In flail shoulders with fair to good periscapular musculature, stabilization of the shoulder joint gives definite improvement in function. In tuberculosis of the shoulder joint in adults, stabilization has become the treatment of choice.

---

*Presented before annual meeting Nebraska State Medical Association, Omaha, May 25, 1933.

In all conditions where limited or lost motion in the shoulder joint is to be anticipated, the position of fixation for optimum function is ten to fifteen degrees less than the horizontal with flexion of thirty degrees; and with the degree of rotation that will, with full flexion at the elbow, approximate the hand to the face. The scapular mobility will make the forearm and head available for use from the vertex to the waist line. The elbow can be almost approximated to the trunk, making the position good cosmetically.

At the elbow, where anchylosis is anticipated, the daily demand or occupation of the patient is the basis for judgment of the fixation position. The pitch-fork position for laborers and the dressing-table position for ladies are examples of choice. Where limited motion is anticipated, the range from 80 degrees to 120 degrees is the most useful.

For anchylosed elbows, the operative technic of arthroplasty has reached the stage where good range of motion with good stability and little or no pain can be assured in a large percentage of cases.

In the forearm where rotation may be lost, the position of optimum function is in the plane mid way between pronation and suppination.

At the wrist, in all conditions permanent flexion should be assiduously avoided. The reason for this is the inability of the finger flexors to function strongly or to great length without undue fatigue. Dorsiflexion of the wrist into the writing attitude is the position of best function. Arthroplasty of the wrist is not yet satisfactorily accomplished.

In the hand, a straight finger is painfully awkward, and due to the connecting tendon slips, complete flexion of other fingers is impaired. Semiflexion of finger joints is the position of choice.

In the lower extremities, the joints are subjected to the necessity of weight bearing. The elements of pain and instability become more important than in the uppers. Poor alinement of weight bearing joint surfaces increases the strain of continued activity. Mobility is often sacrificed for stability and strength, also to promote healing in a progressing disease.

In the hip joint as a result of fracture, suppurative arthritis, etc., anchylosis may be anticipated. The position of election is still under discussion. Where shortening is great, fixation in fifteen to twenty degrees of abduction aids with the tilted pelvis in overcoming this defect. In other cases, anchylosis in less than ten degrees adduction with fifteen to twenty degrees flexion gives a better gait, fair ability to sit in the ordinary chair, and certainly less mechanical strain on the low back. In young women, the neutral position or very slight abduction is preferable.

For purposes of arresting disease, as tuberculosis or the painful productive osteoarthritides, anchylosis is the treatment of choice. There is offered a more certain and more rapid chance for resuming a fair degree of the normal activity with greater security.

The knee joint is more exposed and less well protected from injury than any other major articulations. The frequency of minor trauma is probably a factor in the frequent occurrence of suppurative arthritis. Early and adequate incision and adequate drainage with painstaking postoperative care may frequently prevent anchylosis. Constant guard can prevent flexion contractures at the knee and posterior displacement of the tibia upon the femur. The same attitude applies to tuberculosis above the knee joint. In infantile paralysis, the flexion contracture here is too frequent.

At the knee, where anchylosis is anticipated or judiciously selected, slight flexion is desirable. In men, flexion of ten degrees; in women, flexion of fifteen degrees are the positions of choice.

At the ankle joint, fixation of the foot at ninety degrees on the leg or with very slight equinus is the position of choice. If there be shortening of more than one-half inch or of marked degree, sufficient toe-drop is given to permit the toes to reach the ground, the heel then being supported by an elevation or in the shoe.

In the tarsal region, sacrifice of mobility for stability or of mobility for relief of pain is good surgery for improvement of function. In fractures of the astragalus, or os calcis, function is sharply improved by stabilizing operations.

FUNCTION IN MOTOR SYSTEM

NORMAL	SUBNORMAL
Health	Disease, Injury or Congenital Defect
Subconscious	Discomfort or Pain
Mobility	Immobility
	Anchylosis
	Decreased Mobility
Coordination	Incoordination
	Muscle Imbalance
	Athetosis
Stability	Instability
	Occasional
	Constant
Durability	Impaired Strength
Anatomic Alinement	Mal-alinement
	Poor Weight Bearing lines

THERAPEUTIC CONSIDERATION

Arrested Disease	Progressing Disease

COSMETIC CONSIDERATION

Normal Contour	Deformity

In the analysis of an individual case, the foregoing factors and their inter-relations are to be carefully balanced in the formation of a judgment to sacrifice one factor to gain the advantage of another.

If surgical interference be indicated, the proper judgment of "when to operate" is essential. All infectious processes should be mistrusted until quiescent for a year; and traumatic cases should be delayed until new bone formation has ceased, or better, until the bony trabeculations are definitely shown in the radiograms.

Judgment properly will give consideration of the patients occupation, social status, adaptability, and responsibility, the demands to be made upon him. Questions arise

1. Has the disease or injury incapacitated him for his former work? Can his former work by minor alterations be adapted to his subnormal capacity?

2. Is this patient capable of being economically trained for a type of work more adapted to his physical handicap?

3. Will he be a better social unit working for himself or for an employer?

4. Can suitable employment be consistently found by this person?

CASE HISTORIES

Case 1: Male, 30, congenital malformation lumbosacral regions. Intercolated hemi vertebra. Under added mechanical strain and with decreasing muscular efficiency incident to middle age, developed pain locally and also referred to the sciatic nerve. Rx—Anchylosis by bone grafting.

Case 2: Female, 26, fracture dislocation vertebra (L. II). Irritative lesion of nerve roots and motor weakness in anterior crural distribution. Reduction failed with conservative measures. Rx-Open operation for reduction and anchylosis by bone grafting.

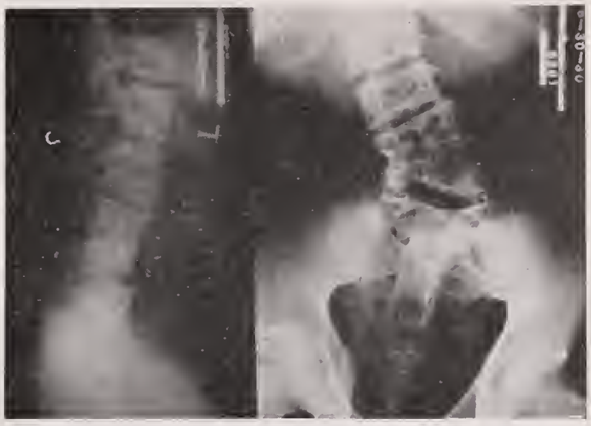


Fig. II-A—Male—30—Congenital malformation lumbosacral regions. Intercolated Hemi vertebra. Under added mechanical strain and with decreasing muscular efficiency incident to middle age, developed pain locally and also referred to the sciatic nerve. Rx—Anchylosis by bone grafting.

Case 3: Female, 23, tuberculous spondylitis dorsal XII and lumbar I. Conservative treatment for six months; disease progressing. Rx—Anchylosis by bone grafting.

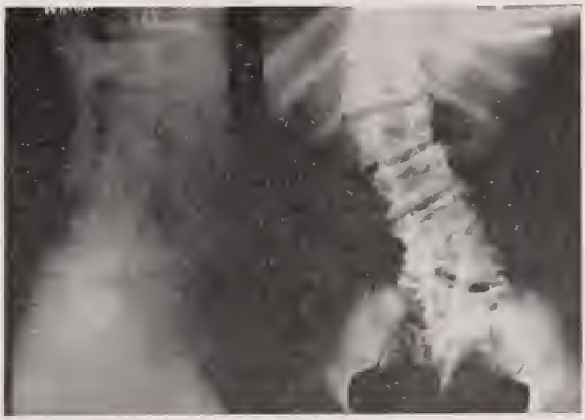


Fig. II-B Postoperative. Lumbosacral bone graft.

Case 4: Male, 58, spondylitis, chronic infectious, generalized, duration of symptoms four years; now

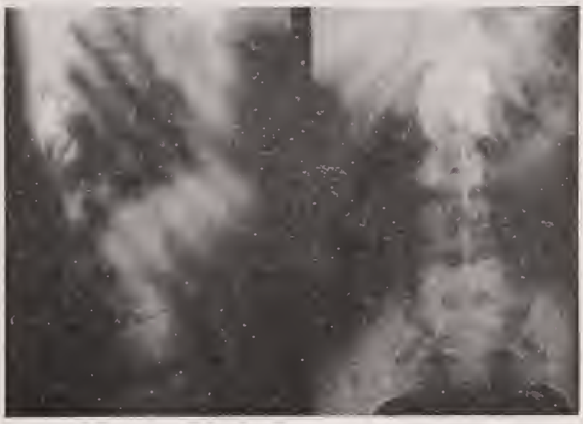


Fig. III-A—Female—25—Tuberculosis sondylitis dorsal XII and Lumbar I. Conservative treatment for six months; disease progressing. Rx—Anchylosis by bone grafting.

anchylosis except for cervico-dorsal and one lumbar articulation. Weight bearing lines fair to good.

Case 5: Female, 29, fracture at elbow, simple, with comminution of humerus, radius and ulna. Reduction into good alinement and fixation at ninety degrees, resulting in anchylosis. Rx After one year, arthroplasty; stability, motion from eighty to one-hundred and twenty, but some discomfort.

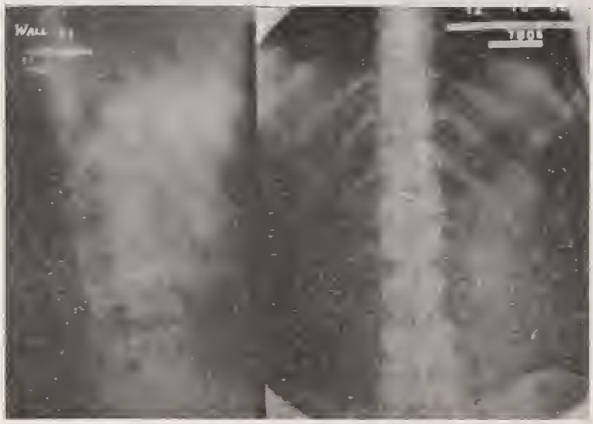


Fig. III-B—Postoperative. Bone graft and fusion.

Case 6: Female, 45, arthritis of elbow. Subacute infectious, non-suppurative. Quiescent for one year, position at ninety degrees. Rx—Arthroplasty in 1930. Stability and motion from eighty to one hundred and sixty degrees.

Case 7: Male, 30, fracture at elbow. Old with Volkmann Ischaemic contracture. Conservative measures over two-year period. Rx—Operative procedure for resection of portion of carpus and increased dorsiflexion at radio-carpal joint.

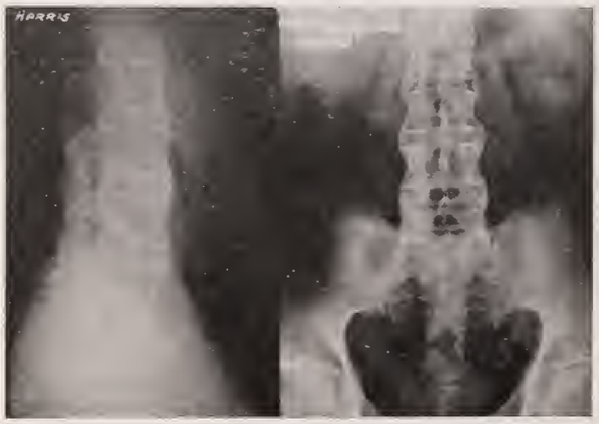


Fig. I—Male—58—Spondylitis, Chronic Infectious, generalized—duration of symptoms four years; now anchylosis except for cervico-dorsal and one lumbar articulation. Weight bearing lines fair to good.

Case 8: Male, 21, arthritis at wrist. Acute infectious, non-suppurative. Anchylosis in volar flexion. Rx—Attempted arthroplasty with failure in motion, but improved functional position in neutral position.

Case 9: Female, 50, dislocation proximal interphalangeal joint, fourth finger. Multiple arthritis, chronic productive type. Limited motion to be anticipated. Position of fixation semi-flexion.

Case 10: Male, 17, arthritis of hips, acute suppurative, bilateral with dislocation at age of 7. Traction and manipulation failed; reduction by open operation. At age of 14, osteotomy. Subtrochanteric on right; at 15, arthroplasty on left, followed by reanchylosis, but in better position.

Case 11: Female, 26, arthritis, chronic, degenerative; lesion showing progressive destruction in both acetabulum and head of femur; pain and increasing disability. Rx—Anchylosis by bone grafting from ilium to greater trochanter.

Case 12: Female, 18, misplacement of hips, congenital, bilateral. Anchylosis of right in flexion at 120 degrees. Rx—Subcapital osteotomy for better weight bearing line.

Case 13: Female, 43, tuberculosis of femur and tibia at knee joint. Rx—Anchylosis for arrest of the disease. Stability, loss of pain, good weight bearing lines. (Died 18 months later from genito-urinary tuberculosis).

Case 14: Female, 28, arthritis of knee and ankle, acute, non-suppurative; thrombophlebitis, femoral. Anchylosis of knee in good functional position. Anchylosis of ankle in poor functional position. Operation still contra-indicated by vascular condition.

Case 15: Female, 23, arthritis knee, acute, non-suppurative; anchylosis in good position. Rx—Arthroplasty with stability good and motion from 170 to 90 degrees.

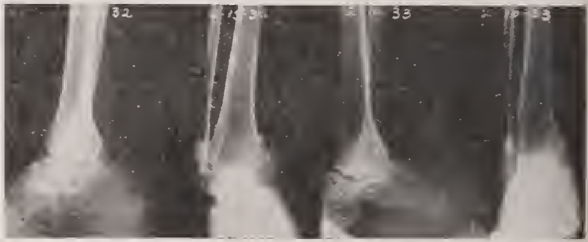


Fig. V—Female—22—Fracture dislocation of astragalus, compound. Functional position poor, weight bearing painful and only on outer border front portion of foot. Rx—Astragalectomy—improved weight bearing lines, improved motion, decreased pain, better appearance.

Case 16: Female, 22, fracture dislocation of astragalus, compound. Functional position poor, weight bearing painful and only on outer border front portion of foot. Rx—Astragalectomy, improved weight bearing lines, improved motion, decreased pain, better appearance.

Case 17: Male, 16, infantile paralysis, residual dangle leg and foot on left, talipes equino-cavus on right. Rx—On right, stripping plantar fascia from oscalcis and forcible stretching, later sub-astragaloid and astragalo-scaphoid arthrodesis with posterior bone block on os calcis. Result: Improved weight bearing lines and greater stability with limited motion.

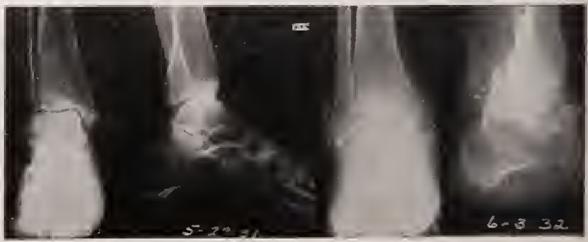


Fig. IV—Female—Anterior poliomeylitis, residual, dangle foot. Arthrodesis subastragaloid and astragalo-scaphoid with Campbell bone block to prevent foot drop.

Case 18: Female, anterior poliomyelitis, residual, dangle foot. Arthrodesis subastragaloid and astragalo-scaphoid with Campbell bone block to prevent foot drop.

TREATMENT OF SOME COMMON ORGANIC NEUROLOGIC SYNDROMES*

A. E. BENNETT, M. D.,
Omaha, Nebraska.

There has been a widespread feeling in the past that therapeutics in neurologic conditions did not offer a very fruitful field. This has been due to the frequency of chronicity in neurologic practice and because teaching material in neurologic clinics has been largely upon the end stages of degenerative disease with poor therapeutic outlook.

In recent years, however, a great change has taken place in neurologic therapeutics. Some of the most brilliant advances in therapeutics have occurred in nervous and mental disorders. In former days it was the fashion to dwell largely upon physiologic action of drugs. This practice led to a superficial treatment of symptoms. A better understanding of bacteriology, serology, pathology, biochemistry, and neuropathology with refinements in neurosurgery have led to a more scientific attitude of directing therapy toward causes instead of symptoms. Another factor in improved therapy seems to me to be the fact that serious nervous diseases are recognized earlier, due to increased diagnostic acumen upon the part of the profession, and appropriate therapy is started at once.

MANAGEMENT OF NEUROSYPHILIS

It was formerly believed that neurosyphilis began some years after the chancre infection. We now know that invasion of the central nervous system by the spirochete begins with the blood stream dissemination of the organisms. One-third of all early syphilis patients show changes in spinal fluid serology during the first year of the disease(1). These patients remain in the group of asymptomatic neurosyphilis and are potential latter year paretics, tabetics, or meningo-vascular nerve syphilitics unless completely cured by the intelligent supervision of the first doctor. The first principle of proper management, then, of neurosyphilis must be the understanding of prophylactic treatment to prevent the serious later cerebrospinal manifestations.

It should now be common knowledge that blood Wassermann reactions are frequently negative while the spinal fluid is positive. This means that neurosyhpilis can always be diagnosed during the asymptomatic stage and is readily cured. Every syphilitic patient should have spinal fluid studies after the first year's treatment and should not be dismissed as cured until a negative spinal fluid is assured, and after that he must be rechecked at intervals.

ROUTINE TREATMENT OF EARLY ASYMPTOMATIC TYPES OF NEUROSYPHILIS

Most of these cases will respond clinically and serologically to routine treatment of neoarsphenamine in biweekly doses of .6 gm. with bismuth in .1 to .2 gm. doses given in courses of three months, followed by rest periods, during which physiologic doses of iodine are given. The spinal fluid serology should be checked every six months. Bismuth salts have practically replaced mercury because of their increased spirocheticidal action and low toxicity. They are almost as potent as the arsenicals in reducing the Wassermann reaction.

In cerebral syphilis, advanced paresis, or after fever therapy, tryparsamide or acetarsone are preferable drugs. During the early experiments with these drugs optic neuritis was often produced, but this was invariably the result of overdosage. This complication is rarely seen now. These drugs can be given in courses or continuously until the serology is negative. Acetarsone, originally called "stovarsol", may prove to be the drug of choice. Clinical reports of its use in paresis indicate it will produce complete remission in about fifty per cent of patients, and in some cases where malarial therapy has failed.

FEVER THERAPY

This is one of the great modern advances in neurologic therapy. It is now definitely established that malarial inoculation or its equivalent in fever production is indicated in all forms of resistant or so-called Wassermann-fast syphilis. It is the emergency treatment of choice in acute cerebral syphilis or paresis. Malarial treatment has not been replaced by other forms of fever therapy. Statistics all over the world agree that in one-third to one-half of all cases of paresis its use will obtain a remission of symptoms. Where malarial treatment is not available because the patient is immune to malaria or its use is contraindicated on account of some serious systemic condition, then other forms of artificial fever should be used, by agents such as 2 per cent sulphur in oil intramuscularly, typhoid vaccine intravenously, or the production of hyperthermia by baths or electricity. I have frequently produced excellent remissions by courses of sulphur in oil and typhoid vaccine. Physical therapy is expensive, impractical and has no superior advantages. Some weeks after fever therapy the routine treatment must be administered again until the patient is serologically negative, but much less vigorously than before.

---

*Read before Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society at Laurel, Nebraska, December 7, 1933; Omaha-Midwest Clinical Society, November 3, 1933.

Swift-Ellis treatment (intraspinal arsphenaminized serum injection) has practically passed out of the picture since the advent of fever therapy, but it still has a limited place in the palliative relief of tabetic crises or pains. It is probable that results obtained were from aseptic meningeal reaction, produced similarly to fever reaction and not from minute doses of arsenic administered intrathecally. Cisternal and spinal drainages are of value in acute neurosyphilis following intravenous medication and for relief of pressure or excitement phases of paresis. The drainage undoubtedly encourages greater concentration of the drug within the neural axis. The intravenous injection of sodium iodide is a measure of great value in resistant types of neurosyphilis.

Too many physicians rely solely upon the Wassermann test and do not use a complete spinal fluid serologic check. Four checks are possible, cell count, protein estimation, Wassermann, and colloidal gold. All should be used as guides to estimate therapeutic result.

MENINGITIS

A complete discussion of the proper management of various types of meningitis would make a large paper in itself. I can touch upon only a few important points at this time. All secondary pyogenic meningitides still carry a high mortality of at least ninety-five per cent, illustrating the lack of specificity of therapy. Advances are being made, however, and occasional results are being reported. In order to get results at all, very early and radical measures must be adopted courageously with the thought that one has everything to gain and nothing to lose. In order to expect results therapy must be started within twenty-four hours after meningeal infection from such sources as mastoiditis, lateral sinus, thrombophlebitis, or sphenoid empyema, which must be eradicated by surgery. The measures of value following this step are continuous spinal drainage, very high fluid intake, intracarotid injection of specific sera for pneumococcus meningitis and less specific measures such as Pregl's solution. The use of specific sera intracisternally is indicated. A careful observation must be made for evidence of cerebellar foramen magnum block, which will produce medullary paralysis, and if the block is present, dehydration by means of hypertonic intravenous glucose to reduce cerebral edema should be used.

The control of meningococcus meningitis is fortunately a happier situation, thanks to the specific polyvalent serum. The mortality for all cases of epidemic cerebrospinal fever should run about twenty per cent; for early cases not more than ten per cent. The fundamental principle in a diagnosis of meningitis is that the only method of diagnosis is the finding of a specific micro-organism from the cerebrospinal fluid. Upon obtaining a purulent spinal fluid, if the organism is in doubt, or none can be found, the case should always be considered as meningococcus until ruled out beyond question of a doubt. One is never justified in withholding serum treatment until a laboratory gives a report. Serum therapy must be started as soon as possible. Some cases will never show organisms upon culture or smear if serum is given early, and these cases make the best clinical response. It is my belief that large doses of serum given intravenously very early in the disease produce the best result. Most diagnoses are made after the blood stream stage, so the serum has its best effects intrathecally. For many reasons cisternal magnum injections are preferable and about twice as effective as intraspinal(2). I personally prefer to give two injections in the cistern to one spinally. Thirty cc. of unconcentrated serum or 10 cc. concentrated serum is given every eight to twelve hours at first until the clinical symptoms improve and the organisms disappear from the fluid, with total cell count dropping below 500 per cmm. Usually we either get results or do not within five days. Unless the infection is under control by this time, the patient is in danger of permanent serious residual defects.

The greatest danger, so far as life is concerned, early in the disease, comes from cerebral edema producing foramen magnum block with medullary compression and death. Copious spinal drainage is emphasized by all and is good therapy as long as pressure remains high and the canal patent. However, I have proved to my satisfaction that many cases are lost through ignorance of the clinical syndrome of cerebellar herniation. The following symptoms and signs indicate impending medullary compression and contraindicate further spinal or cisternal taps until the block has been relieved, usually by dehydration:(3) Increasing occipital pain not relieved by drainage, or increased neck pain with head retraction, and any medullary symptoms, such as disturbance of the pulse, respiratory ratio, dysphagia, or vomiting, justify a diagnosis of cerebrospinal fluid block at the foramen magnum. Any abnormal pressure phenomenon demonstrated by puncture, such as absence of response upon jugular compression, a sudden drop in pressure reading, low pressure, "dry tap", or a reversed or bizarre Queckenstedt's sign, clinches the diagnosis and calls for immediate dehydration therapy and at times ventricular drainage to save life. In other words, if upon puncture one detects any sudden change, better discontinue drainage and give intravenous hypertonic glucose until the intraspinal pressure is re-established.

In certain cases left with low grade block and hydrocephalus, encephalographic examination is indicated. The complete spinal drainage with air replacement is good therapy and tends to relieve the subarachnoidal obstruction.

ACUTE ANTERIOR POLIOMYELITIS AND EPIDEMIC ENCEPHALITIS

I have grouped these diseases because the symptomatology and etiologic evidence at hand indicate a similar infectious agent as causing both diseases. Early diagnosis of these two diseases is imperative if therapeutic results are to be obtained. We must make a diagnosis in the preparalytic stage of poliomyelitis and this can only be done by resorting to more frequent spinal puncture in suspicious cases. Any acute upper respiratory-like infection, developing headache, or other cerebral symptoms showing even slight neck rigidity, should have lumbar puncture and immediate cell count. A lymphocytic pleocytosis makes a diagnosis of encephalitis or poliomyelitis probable, if tuberculous meningitis can be excluded as a possibility. I treat both of these diseases alike. Human convalescent serum is available at all times in Omaha for these diseases, and while there is some doubt as to its value, it is the best agent we have at the present time. Forty cc. doses given intramuscularly and intravenously, every eight hours during the febrile stage for two or more injections, have in many instances seemed life saving or prevented serious sequelae or paralysis.

TRAUMATIC CEREBRAL LESIONS

In the management of acute head injury, therapeutics has definitely improved in the past decade. The indications for surgical and medical therapy are more clearly defined. Proper analysis of the symptoms and signs are very important. Intracranial complications are four in number:

1. Cerebral edema
2. Hemorrhage
3. Laceration of brain tissue
4. Infection.

At first the important symptoms involve the general condition of the patient, particularly the degree of shock and depth of consciousness and the degree of medullary center involvement. Focal symptoms are of secondary importance at first. They may only be irritative phenomena. Rarely is there early indication for hasty surgery, and the only one is hemorrhage from larger vessels. Later, after the shock stage, the surgical indications are four in number; of which only the first three are common:

1. Depressed fracture.
2. Hemorrhage—middle meningeal hemorrhage shown by spreading unilateral paresis and increasing pressure signs which indicate external carotid ligatation and subtemporal decompression.
3. Delayed hematoma formation from pial vein or sinus rupture shown by continued pressure after bloody spinal fluid stage is passed, plus focal signs.
4. Rare cases where increased intracranial pressure persists or progresses from cerebral edema, with danger of medullary paralysis not controlled by medical dehydration or spinal drainage.

Thus the large percentage of acute head trauma patients that survive the initial shock stage respond to medical management by the routine use of large doses of hypertonic intravenous glucose injections every eight hours, alternated with concentrated magnesium sulphate by mouth or bowel. Spinal drainages are a great help as long as pressure is high, but they should be performed cautiously, and they must be discontinued when block phenomena develop. Blood in the subarachnoid spaces should be removed as far as possible by repeated drainages. These measures along with absolute rest have reduced the mortality and morbidity of cerebral trauma cases much below statistics in clincs where surgery has been used hastily.

In so-called concussion states or traumatic encephalitis cases left with profound symptoms, the use of encephalography, a complete spinal drainage with air replacement, has improved about fifty per cent of these patients(4). This procedure tends to open up or re-establish blocked subarachnoid spaces, permitting a more normal flow or exit for cerebrospinal fluid absorption. X-ray visualization of the ventricular and subarachnoid systems in these patients usually shows that organic damage has been done even though the head injury was of minor degree without skull fracture.

MENINGEAL APOPLEXY

This may sound like a rare condition, but I suspect it is much more common than usually realized(5). Most cases are not properly diagnosed because of lack of pathologic understanding and improper interpretation of clinical symptoms. These are cases that usually have a sudden onset of headache, unconsciousness, neck rigidity, delirium, fever, leucocytosis, and at times partial paralysis. Often the syndrome is confused with infectious cerebral disease, cerebral hemorrhage or tumor. The diagnosis is made upon lumbar puncture, finding a bloody spinal fluid under pressure. The cause is almost always an infectious aneurism of the circle of Willis that has ruptured, producing a sterile hemorrhagic meningitis. If focal neurologic signs develop, indicating the side of the lesion, then internal carotid ligation is indicated and is life saving. If no focal signs are present dehydrating measures to control intracranial pressure, anticoagulants and spinal drainage to remove blood are valuable and curative measures.

BRAIN TUMOR AND ABSCESSES

These are purely surgical problems. The results in these two conditions are much happier than formerly. Operative deaths are a rarity now because of a better understanding of pressure symptoms and better palliative treatment plus improved surgical technic. Two or three stage operations save many patients. There still remains, unfortunately, the seventy-five per cent group of malignant gliomata that have poor surgical outlook. Some of these are benefited by deep x-ray therapy.

SINUS THROMBOSIS

This serious complication following head infection, usually a lateral sinus thrombophlebitis secondary to mastoiditis, is readily controlled now by early diagnosis and ligation. Where localization is in doubt in cases of double mastoid involvement, the use of spinal puncture and study of jugular compression phenomena on each side (Ayer-Tobey-Queckenstedt's sign) are of great value. The finding of an absence or retarded response upon compressing one jugular vein, with a normal rise in pressure on the other side, indicates the side of the sinus occlusion. Any ear infection showing continued sepsis or an exacerbation with chills and fever, indicative of blood stream invasion, should be sufficient to cause one to tie off the internal jugular vein and open and pack the sinus even though a complete thrombus is not formed. I know of no more dramatic surgical results than are obtained in these cases. The only ones lost are through unnecessary delay.

CHRONIC MYELITIS

This is a symptom diagnosis that should be carried as far pathologically and etiologically as possible. A better understanding is prevailing as to the cause of chronic paraplegic states. Formerly most cases of myelitis were called locomotor ataxia, which is now a relatively rarer disease. Multiple sclerosis and combined sclerosis are more common. Spinal cord compressions are frequently overlooked and this is pathetic because of the good therapeutic outlook.

Multiple sclerosis, unfortunately, does not present a good therapeutic outlook although we feel(6) that fever therapy in the earlier stages helps many cases. Combined sclerosis when diagnosed early has an excellent therapeutic outlook because of the better treatment for pernicious anemia. Liver diet or the active principle equivalent along with hydrochloric acid and vitamin diet in the early stages brings about complete remission. The diagnosis must be made before advanced cord changes are produced, if possible during the stage of paresthesias, before ataxia is produced.

Spinal cord compression diagnoses are missed because of improper understanding of neurologic symptoms. Any chronic myelitis with pain may be caused by a cord tumor, with usually a stage of progressively severe root pain before the paralysis begins. This pain, when referred to the abdomen, may imitate intra-abdominal disease and many patients having spinal cord tumor have suffered unnecessary abdominal operations. One patient had had five abdominal operations before the sixth operation for spinal cord tumor was done. Careful spinal fluid studies make the diagnosis certain: findings of a partial or complete spinal canal obstruction by pressure readings from cisternal and spinal puncture, showing an absence of jugular compression response from the lumbar needle; often a yellow spinal fluid with high protein content and a normal cisternal fluid. Any chronic myelitic syndrome showing partial or complete spinal canal obstruction should have laminectomy. The surgical results are usually excellent.

POLYNEURITIS

Infectious, toxic, or metabolic neuritides offer a good therapeutic outlook when treatment is directed toward the underlying cause. The latest research investigations have demonstrated that many neuritides are deficiency diseases or avitaminosis states, even though the primary etiologic factor may be infection, alcohol, metal poisoning or what not. These cases invaribly show some systemic disturbance, usually of the gastro intestinal or hepatic systems, which makes assimilation of vitamins difficult. The therapeutic administration of vitamins hastens recovery in these cases, along with removal of foci of infection, nutritional measures, counteracting of anemia, etc. In the subacute and chronic stages physiotherapy is very helpful in restoring muscle functions.

SCIATIC NEURITIS

We must always consider this a symptom diagnosis and attempt to relieve the underlying cause. In those cases where no primary cause can be found, we are justified in calling the condition sciatic neuritis. Symptomatic relief can be obtained in about seventy-five per cent of chronic sciatic cases by caudal or sacral and perineural injections of novocaine and normal saline, followed by stretching of the nerve. These injections are easily performed and not painful to the patient.

Other forms of mononeuritis are handled in a like manner, with removal of underlying causes such as focal infection, and symptomatic treatments with physiotherapy. Fever therapy will often overcome an intractable neuritic syndrome. In the removal of active foci of infection, if possible, autogenous vaccines should be made and administered. This treatment is preferable to the non-specific protein shock therapy.

CONVULSIVE STATES

The treatment of essential epilepsy has not been improved upon in the past fifteen years. in my opinion, except in the fact that more accurate diagnosis is being made. All efforts should be made to exclude organic cause before resorting to symptomatic treatment of the convulsions. This examination should be exhaustive and include encephalography, if at all indicated, to exclude latent cerebral tumor or other organic cerebral disease.

Dietary treatment for epilepsy has strong adherents. Some patients seem to improve upon ketogenic diet or dehydration diet, but so have they upon snake venom injection, circumcision, psychoanalysis, and what not. Sedative drug therapy should be kept up continuously when once begun, and only discontinued gradually after convulsions have ceased for a long period of time. Bromides and phenobarbital are the sheet anchors in treatment. Various combinations and doses must be tried until the best results are obtained. We can only hope that future research will give us more aid in the intelligent management of epilepsy.

In conclusion, I hope I have conveyed the idea that, while in the end stages neurologic therapeutics is often disappointing, it is not more so than in degenerations in any visceral state. When early diagnoses are made and therapy is intelligently directed the results are as spectacular as in any field of medicine.

BIBLIOGRAPHY

1. Bennett, A. E., and Nilsson, G.: Studies in Early Asymptomatic Neurosyphilis, Nebraska M. J. 14:400 (October) 1929.

2. Bennett, A. E.: Diagnostic and Therapeutic Indications for Cisternal Puncture, J. A. M. A. 93:1060 (Oct. 5) 1929.

3. Bennett, A. E.: Cerebellar Herniation into Foramen Magnum, J. A. M. A. 100:1922 (June 17) 1933.

4. Bennett, A. E., and Hunt, H. B.: Traumatic Encephalitis: Case Reports of So-Called Cerebral Concussion with Encephalographic Findings, Arch. Surg 26:397 (March) 1933.

5. Keegan, J. Jay, and Bennett, A. E.: Cerebral Aneurysm and Cortical Herniation, Arch. of Neurol. & Psychiat. 26:36-49 (July) 1931.

6. Young, G. A., and Bennett, A. E.: Non-Specific Protein (Typhoid Vaccine) Therapy of Disseminated Sclerosis, Nebr. State Med. Jour. 12:401, 1927.

UNUSUAL GOITRES*

MAX EMMERT, M. D.,
Omaha, Nebraska.

The thyroid has been referred to as the carburetor which regulates the consumption of food. It is interesting to note that the secreting part of the gland structure called the acinus is composed of cells which secrete two ways, on the one side into the lumen of the acinus and on the other directly into the circulatory system. Under normal conditions the acinus is filled with colloid material containing a high percentage of iodine which is called iodothyroglobulin. This fact is of importance in estimating the different phases of activity of the gland in health and disease. The thyroid is the only gland in the body concerned with iodine metabolism which fact is demonstrated clinically by the effect of iodine upon the pathological gland.

Virchow has stated an aphorism which has never been disproven, namely, "All these so-called varieties are only different methods of development of essentially the same form of goitre." During life there is constantly a cycle of activity transpiring in the thyroid. The state of hyperplasia or activity being induced by stimuli such as chemical, bacterial and psychic followed by a recession upon removal of the stimuli called the state of involution. Examination of pathologic specimens of glands which have passed through several states of hyper-activity will show evidence of the earlier explosions. After a major explosion the gland never returns to normal, and may again enter a state of hyperplasia with the return of the exciting stimuli. All parts of the gland do not react alike to outside agents; for example, following iodine therapy during a state of hyperplasia, part of the gland will return to a condition of complete involution while other sections show a resistance to the iodine and remain in a state of hypo-involution. This may account for many cases which do not respond to iodine or which continue a clinical course of hyperactivity after thyroidectomy. The cause of goitre with hyperplasia (thyrotoxicosis) is unknown. However, it is probably due to some irritating agent, bacterial or otherwise, which acts continuously upon the gland. Diseased tonsils are often associated with the hyper-active thyroid. Other glands of internal secretion, especially the adrenals, are affected by the same activating factors which produce hyper-thyroidism and are frequently a part of the clinical picture.

---

*Read before the annual meeting, Nebraska State Medical Association, Lincoln, May 23, 1934.

The so-called adenomata of the thyroid are not tumors in the true sense of the term, only 8% being neoplasms, the remainder are the result of the repeated cycles of activity, namely, hyperplasia and involution. The symptomatology and clinical findings of thyrotoxicosis are so well known and the operative procedure so well standardized that they will not be considered in this brief review. I wish simply to call attention to a few classes of unusual cases which I have observed.

Mrs. O. L., a multipara, aged 58, was brought to the hospital February 21, 1930, with a highly toxic adenoma of the thyroid. Her symptoms dated back two years, or one year following the menopause.

Examination revealed a large nodular gland. Her pulse was 120, BP 170/70 and B. M. R.+51. Her tonsils were large and diseased and there was a marked pyorrhea. On March 3, 1930, under local anaesthesia, all of the right lobe and isthmus and one-half of the left lobe was removed. The gland was very vascular. The patient returned September 1, 1930, complaining of being very weak and nervous. She had gained 24 pounds in weight. Her pulse was 90 and B.M.R.+45. The tonsils were removed followed by an alarming hemorrhage.

The patient returned again October 14, 1930, with a pulse of 140 and B.M.R.+60. On October 20, 1930, the remainder of the left lobe of the thyroid was removed, leaving a small section at the lower pole about as large as the terminal phalanx of the little finger. She was advised to have her teeth extracted. On July 18, 1931, the patient returned for examination. General condition good. Pulse 100+. B.M.R.+125. X-ray therapy was later used on the thyroid. A letter dated April 11, 1934, states: "I am getting along fine. Am able to do my own work and have been since you saw me last. I weigh 175 pounds."

This was the first of two cases which I have found necessary to re-operate. Undoubtedly this case belongs to that group described by Crile as being complicated by hyper-adrenal activity which does not recede after extensive thyroidectomy. Crile contends that the adrenal is subject to the same stimuli and produces the same clinical picture as the hyperactive thyroid. Unfortunately they cannot be differentiated clinically at the present time prior to operation and are suspected only after extensive thyroidectomy with a continuation of symptoms. Crile has obtained good results in this group by de-nervating the adrenals. The amount of gland tissue to be removed at operation must depend upon the experience and judgment of the surgeon. There is no fixed rule in this matter, but in my opinion the greater the dilatation of the superficial vessels over the thyroid the more liberal should be the resection of gland tissue.

The relationship of cardiac symptoms to thyroid pathology is assuming increased importance in medical literature.

Mrs. E. G., aged 60, a grain exchange broker, was first seen August 15, 1928, complaining of symptoms referable to the circulatory system. He responded nicely under potassium iodide for about a year. Pulse and blood pressure were normal. He then developed slight cardiac irregularity and dyspnoea and was induced to enter the hospital for complete examination on June 1, 1929. The following day he developed an acute abdominal condition with localized pain over the appendix and a WBC of 11800. Consultation with two of our leading internists produced three different diagnoses, except for the necessity of an immediate operation, which was performed under local anaesthesia and was negative as to the cause of the symptoms. Completion of his examination revealed a very small adenoma of the thyroid with a BMR of +90.

While under medical treatment he developed typical symptoms of angina pectoris. Was next seen November 9, 1931, complaining of the aforementioned symptoms. Examination revealed an enlargement of the thyroid, BP 145/70, Pulse 84, B.M.R. +38.

On November 17, 1931, a partial resection of both lobes and the isthmus with ligation of the superior thyroidal arteries was performed. The patient recovered completely and has never had a return of symptoms.

Lahey and others have reported numerous cures of so-called cardiac disease by correction of the thyroid. In this connection it might be well to remember that all hyper-active thyroids are not associated with rapid pulse. At the same time every case with persistent rapid pulse should be investigated for hyper-thyroidism if the condition cannot be explained by pathology elsewhere. Irregular heart action and hypertension are frequently associated with thyroid disease and may lead to that diagnosis. Modern medicine is more concerned with a search for the cause of disease than the treatment of symptoms. If the cause is found the correction is frequently possible.

Thyroid disease in children is not common but occurs with the same clinical picture as that of adults. Beilby reported a case of diffuse toxic thyroid in a child 2 years 9 months old, which was operated, had a return of symptoms and was reoperated nine months later with a successful result. The toxic thyroid usually progresses rapidly in children.

Master A. A., aged 10, was seen July 13, 1932. Since the age of 2 years he had had an enlargement of the thyroid. For the past 2 years he had been under competent medical treatment. During the past year the gland had increased rapidly in size.

Examination revealed large slightly nodular gland. Pulse 90, BP 100/50, B.M.R. +19.

July 20, 1932, under local anaesthesia ¾ of the right lobe and 1/3 of the left were removed with ligation of the superior thyroidal arteries. The pathological diagnosis was that of a very active Foetal Adenoma.

Three weeks after his return home he was brought to the office with an enlargement of the thyroid region greater than before operation. Sarcoma was suspected and x-ray therapy given with remarkably good results. The lad was seen February 21, 1934. Was feeling fine and apparently a healthy normal lad. B.M.R. +8.

Cattell, of Lahey's Clinic, states that they have seen only three foetal adenomas in children at the clinic. He further states that the only benign neoplasm of the thyroid in children is the foetal adenoma which should be removed because of the danger of malignancy. This type of growth does not respond to medical treatment. However, as the child becomes older it may disappear from the neck by slipping down into the substernal space where sooner or later it will cause trouble from pressure or malignancy.

The diffuse enlargement of the thyroid in girls during their early menstrual life is usually colloid in type and not surgical. They respond to iodine therapy and many disappear on or before the age of 23 years. However, they should be kept under observation for a period of years because of the possibility of a toxic development.

The thyroid gland is especially resistant to infections. While practically every tissue of the body is susceptible to the tubercle bacillus, tuberculosis of the thyroid is practically unknown. This fact holds true also for metastasis of carcinoma which never occurs in the thyroid. All malignant growths of the thyroid have their origin in the gland itself.

Mr. L. P., aged 62, a rancher, was seen June 9, 1933, complaining of "shortness of breath, change in voice, swollen throat, difficulty in swallowing, pain back of ears and head and weakness."

For 13 years he had noticed a small mass in the left lobe of the thyroid. Eight weeks ago he was taken ill with right sided bronchial pneumonia. Four weeks later as the pneumonia receded the left lobe of the thyroid increased rapidly in size and the swelling soon crossed the midline to the right side.

Examination revealed a very weak man, ashy fascies, temp. 102, pulse 110, BP 90/60. B.M.R. +49. Bilateral enlargement of the thyroid, very slightly tender right side and slightly nodular on the left side. An area of mild erythema size of a dollar in the midline.

June 12, 1933, under local anaesthesia and through a small transverse incision a pint of white pus was evacuated from the right lobe of the thyroid. Smears showed chains of streptococci. The patient made a good symptomatic recovery with complete recession of the right lobe and partial recession of the left. On July 12, 1933, his B.M.R. was +32.

On January 18, 1934, he returned for examination. He had gained 20 pounds in weight but felt weak on exercise. The left lobe of the thyroid was large and nodular and his B.M.R. +85.

On January 22, 1934, under local anaesthesia 4/5 of the left lobe was removed.

March 15, 1934, his weight was 182 pounds, pulse 72, BP 130/80 and he felt fine.

Suppurative thyroiditis is a rare condition, only 144 cases having been reported up to July, 1933. The condition is prone to develop in individuals whose resistance has been lowered by debilitating illness. The abscess may perforate into the trachea, esophagus or mediastrium and result fatally. The operating surgeon should be prepared to do a tracheotomy.

A somewhat similar condition which does not reach the suppurative stage is called Riedel's Struma or Ligneous Thyroiditis. It is due to a low grade infection and is often mistaken for carcinoma of the thyroid with the frequent result that the patient is denied operation and allowed to die from a curable disease.

CONCLUSIONS

Disease of the thyroid gland has many ramifications and therefore is a complicated problem. It should always be considered in its relationship with other organs especially the endocrine system. The diagnosis is not always easy because of the frequent absence of classical signs and symptoms referred to in the text books.

More careful observation will undoubtedly condemn the thyroid for many so-called cardiac diseases.

The baso-metabolic test, though not 100% perfect, is the best single indicator to thyroid activity. This test is very sensitive and is only of value when made under proper conditions.

PULMONARY ABSCESS

JOSEPH WEINBERG, M. D.,
Omaha, Nebraska.

Pulmonary abscess is now known to be a much more common disease than was formerly supposed. This has come about through the improved use of the x-ray and a better understanding of surgical conditions of the lungs. As the disease occurs much more frequently than was formerly suspected, and carries with it a very high death rate, about 50%, it is important that there be a general understanding of it among physicians.

Aspiration of septic or non-septic material through a bronchus is the outstanding cause of lung abscess. One of the chief single causes of lung abscess is the operation of tonsillectomy. In all probability the abscess is the result of aspiration of clotted blood, tissue or other foreign substance into a bronchus, with stasis of secretion and infection in the lung tissues distal to the plug. The occurrence of lung abscess following tonsillectomy may be prevented by proper anesthesia and the use of suction during the operative procedure. In this regard care should also be exercised to prevent the aspiration of clots or other material after the patient has returned to his room.

The first symptoms to call attention to lung abscess are sharp localized pain in the thorax, cough and fever. These symptoms usually begin within the week following lodgement of septic material in the lung. The fever is of septic type, high in the afternoon and evening and near normal in the morning. X-ray examination at this time will show an area of density shading off into normal lung tissue. After a variable period, usually two to three weeks, the abscessed area liquifies and the fluid contents rupture into a bronchus or into the pleural cavity. If the abscess ruptures into a bronchus a large amount of foul material is coughed up and the patient is greatly relieved. However, this does not mean that the abscess is cured. Patients giving such history should be carefully observed and x-ray examinations should be made at intervals to determine whether or not there is persistence of cavity. If the abscess persists it goes into a chronic phase with temporary closure of the bronchus the abscess refills and the patient has recurrences of symptoms of acute abscess which are relieved by rupture into a bronchus. In many of the persisting cases the abscess also ruptures into the pleural space so that a pleuro-bronchial fistula is established which drains purulent material when the bronchus is not plugged. There is also spilling of purulent material into other lobes through the bronchial tree. Thus, a chronic bronchitis may be established in the opposite lung due to so-called "internal drainage." The extent of infection with lung abscess is nicely shown by the use of iodized oil bronchography. This radio-opaque oil usually will not enter the abscess but will outline the lung around the abscess thus revealing its exact location. It may also show a dilated bronchial tree or cylindrical bronchiectasis in other parts of the lung as the result of internal drainage. This complication is discussed more completely in an article to be published elsewhere.

In the acute stage there is an active mixed infection with the streptococcus usually predominating. Attention has been focused on the fuso-spirochetal organisms but their importance is doubtful and in all probability they are secondary invaders with low degree of pathogenesis. The constant presence of these organisms is explained by the fact that they are normal inhabitants of the mouth and upper respiratory tract. While the abscess is in the acute stage there should be no active interference. The most valuable medication at this stage is absolute rest. The toxic stage is to be combated with fluids and antipyretic therapy. This expectant treatment should be continued for a period of eight to ten weeks in order to allow a firm fibrous wall to form about the abscess. Arsphenamine has been recommended in the acute stage because of the presence of fuso-spirochetal organisms but it is of doubtful value, except as a palliative measure.

Once the abscess has reached the chronic stage, surgical drainage is indicated. Pneumothorax for the purpose of collapsing the lung abscess is unsatisfactory because of the danger of rupture of the abscess with spread of pus to the mediastinum or pleural cavity. Occasionally pneumothorax is accidentally induced and in such cases the abscess may clear up without further intervention being necessary.

Bronchoscopic drainage is of especial value in the early chronic stage. In addition to enlarging the bronchial communication with the abscess to allow free drainage, the bronchoscope will occasionally discover an unsuspected foreign body and its removal may result in healing of the abscess without further treatment.

The operation of choice is drainage through the thoracic wall performed in two stages. Fortunately, chronic abscesses are almost always peripheral and this facilitates drainage of the abscess through the chest wall. The abscess is definitely located by lateral and anterior-posterior x-ray views. At the first stage, segments of one or two ribs are removed over the site of abscess, and a gauze pack is placed against the parietal pleura to create adhesions between visceral and parietal pleura if such adhesions are not present. After three or four days fibrinous adhesions have created a sufficiently firm union between the serous surfaces of the pleura to wall off this area from the rest of the pleural cavity. At this time the abscess may be drained with relative safety. After locating the area with an aspirating needle the abscess is widely opened, preferably with an electric cautery, as sharp dissection may cause severe bleeding. A rubber dam drain is inserted and after two days Carrel-Dakin treatment is instituted. If the lung abscess is complicated by chronic empyema as it is in many cases, it may be necessary to perform the operation in multiple stages.

The following cases are selected for review because they represent various types of lung abscesses and their complications:

Mrs. A., age 34, was admitted to the University Hospital on July 3, 1928. She gave a history of coughing up a large amount of foul pus two weeks after tonsillectomy. She explained the raising of large amount of purulent material by the fact that she had "caught cold" ten days after tonsillectomy. Apparently symptoms beginning ten days after operation marked the beginning of symptoms of lung abscess. An x-ray examination was made on February 9th and showed a lung abscess in the posterior part of the left upper lobe. Following this initial attack she had recurrences of raising of large amounts of purulent sputum, with intervals of weakness and sepsis during which time the abscess was not draining. In April 1928, she appeared at the University out-patient clinic and at that time showed a persisting lung abscess with pleural thickening in the region of the abscess. Operation for drainage of the abscess was advised at that time but she refused to have anything done. I first saw the patient on July 3, 1928, at which time she was raising large amounts of purulent sputum, about 1000 cc. every twenty-four hours. There was marked clubbing of the fingers and toes, indicating pulmonary sepsis. X-ray on July 5th showed an indefinitely outlined abscess and evidence of empyema communicating with the abscess. The temperature varied from 98 to 100 each day. She states that she wished to have operative treatment because of the distressing symptom of purulent sputum. Operation was performed in four stages. The first stage was performed on July 11th under nitrous oxide-oxygen anesthesia. Three inches of the ninth rib was removed and the pleural cavity exposed. A localized empyema was found communicating with a large bronchus. At this stage the operation was stopped because of rising pulse. A rubber dam drain was inserted for three days and this was followed by Carrel-Dakin treatment. The second stage was performed two weeks later at which time an inter-lobar abscess was drained. The third operation was performed twelve days later at which time the abscess of the lung was drained and the surrounding lung partially decorticated to allow expansion. The pleura was found to be 1 cm. thick. All of these procedures were limited to a safe margin within the ability of the patient to withstand the procedures. The fourth operation was performed on September 5th at which time further decortication was performed. She was dismissed nineteen days after the last operation. The wound was completely healed after three months. Since then she has been entirely free from symptoms of pulmonary disease and has been well in all respects. A lipiodol examination in 1932 showed no evidence of lung disease.

J.A., age 49, farmer, gave a history of developing a lung abscess following "pneumonia" in 1924, with a second "pneumonia" attack in 1925. Examination in 1925 disclosed a large pulmonary abscess at the base of the left lower lobe. Surgical drainage was made at that time but was unsuccessful. Since then there has been expectoration of foul pus with irregular rise in temperature and frequent attacks of what was termed pneumonia. In 1930, a phrenic nerve exeresis was performed on the opposite side, apparently with the idea that this was the principal area of disease. This erroneous interpretation was made from a lipiodol x-ray examination in which an extensive cylindrical bronchiectasis was seen on the right (opposite) side. I first saw the patient in 1932. He complained that he was unable to work and was much distressed by the symptoms of productive coughing and pain. There was also occasional hemoptysis. An x-ray examination with lipiodol showed a filling defect in the left lower lobe, apparently the site of old abscess, and a cylindrical bronchiectasis in the right lower lobe. Operation was advised for drainage of the chronic abscess on the left side but was refused. This case is an excellent example of drainage of purulent material through the bronchial tree from the abscessed area into other lobes of the lungs. Usually eradication of the primary site of infection, that is the lung abscess, will clear up the cylindrical bronchiectasis in other lobes.

V.P., age 32, farmer. I first saw him in July 1932, with a history of cough beginning one year previously and becoming quite severe six months later. In addition to a moderate amount of purulent expectoration he raised occasional blood. He had received pneumothorax treatments which had relieved him considerably until June 1932. At that time his condition appeared to be aggravated and drainage was considered advisable. He had lost fifteen pounds in one year. The only history elicited which might have a bearing on the condition was tonsillectomy in 1912, influenza in 1918 and appendectomy in 1926. When I first saw him he showed an abscessed cavity in the left upper lobe partially collapsed. There was evidence of a pneumothorax which had been induced a few months previously. The white blood count was 14,800. On July 26th segments of the 5th and 6th ribs were removed in the axillary region and a gauze pack placed against the parietal pleura to increase the pleural adhesions already present. This operation was performed under nitrous oxide anesthesia. X-ray examination, four days later, showed increase in the size of the pneumothorax and the lung was quite completely collapsed. Apparently the parietal pleura had been torn during the operation thus allowing air to enter the pleural cavity. X-ray examination, four days later, showed reexpansion of the lung and cavity reduced to 1 cm. in diameter. Orignally it was 4 cm. in diameter. Since then no further operation has been indicated and the abscess has apparently disappeared. Recent examination, made eighteen months after operative procedure shows him to be entirely recovered and again working at his regular occupation as farmer.

B.T., age 28, farmer, was first seen in January 1933. He was well until ten years ago when he developed a pulmonary disturbance diagnosed pneumonia of the left lung. At that time a left pleural abscess was drained. Since then he has been coughing up large amounts of purulent material. Expectoration has increased when he lies on his right side. Examination showed the patient to be rather anemic and of otherwise unhealthy appearance. White blood count was 18,400. There were no tubercle bacilli present in the sputum. Iodized oil x-ray examination showed a filling defect in the left upper lobe, the site of abscess, and a cylindrical bronchiectasis in the left lower lobe. As in Case 2, this was an instance of internal drainage from lung abscess to other parts of the lung. The pleura was thickened over the left thorax laterally and posteriorly. Operation was performed in several stages. At the first stage operation, January 17, 1932, a portion of the sixth rib was resected postero-laterally on the left side. A needle was induced through the parietal pleura and thick pus was aspirated. The pleural pulmonary abscess was opened with a electric cautery and a rubber dam drain inserted. After the first few days Carrel-Dakin treatment was instituted. The patient was dismissed from the hospital after three weeks and dressings continued. In September the empema cavity was unroofed, removing segments of the third to eighth ribs. The parietal pleura was incised and collapsed over the area. The lung was decorticated to allow its expansion. A third operation was performed in November 1933, at which time bronchial fistula was obliterated and further decortication of the lung performed. Although the wound has been open during this entire period the patient has been free from septic symptoms and has increased in weight and strength. The wound is sufficiently closed at the present time to insure complete healing.

A.C., age 25, farmer, entered the University Hospital January 14, 1933, complaining of productive cough, dyspnea, occasional fever and weakness. Several years ago he developed a sudden fever of 103° and his condition was diagnosed as influenza. After several days he expectorated a large quantity of yellow-pink pus. Since then he has continued to raise purulent sputum and has had night sweats. His tonsils were removed one year ago with the hope of relieving his condition. During the past eighteen months he has lost twenty-five pounds in weight. At the time of my examination in January 1933, he showed a white blood count of 14,000 and there was dullness over the left upper thorax. X-ray examination showed a peripheral abscess of the left upper lobe. A lipiodol bronchogram showed bronchial dilatation in the right lower lobe. A two stage operation was performed with satisfactory drainage of the lung abscess. The patient was dismissed after several weeks and has been seen at intervals of a few months since then. When I saw him in November, ten months after operation, he had gained weight and his health was better than it had been for several years. He showed no evidence of persistence of suppurative infection of the lung. Because of the fact that he was in such good health I did not consider it necessary to make a check-up examination with iodized oil. In this instance the lung abscess was in the left upper lobe and the cylindrical bronchiectasis occurred in the right lower lobe.

MAY PSYCHIC STIMULI PRODUCE HAY FEVER?

O. C. NICKUM, M. D.,
Department of Medicine, University Nebraska College of Medicine,
Omaha, Nebraska.

The treatment of hay fever by the process of desensitizing the sufferer to his offending pollen, leaves much to be desired, as the symptom complex may frequently return succeeding years with a new pollen as its apparent cause, and a consequent need for him again being desensitized. Also, for example, persons sensitive to ragweed, as the given causative factor in their symptoms, have been known to make a vacation trip to an area about as productive of ragweed pollen as was their own community, and return reporting entire absence of symptoms while away. Thirdly, transitory periods of impotency are of too frequent association with hay fever for either condition to require a separate explanation. Fourth, much of the treatment falls in the hands of allergists who agree with their patients that the first frost renders inert the pollens in the air yet carefully keep their testing and treatment extracts in the ice chamber all year and still get reactions from overdosage. With all the plants, bees, butterflies, animal emanations, etc., catalogued it is strange that tobacco, the most widely distributed, seems such a seldom offender, and, in the form of snuff has been known to relieve. Jimson weed has been given as a cause for a number of cases of hay fever but its product Strammonium leaves is paradoxically one of the better antispasmodics for respiratory irritation. It is granted that all attempts at this therapy are not unsuccessful but a consideration of the personality type of the patients gives reason for a belief that the elaborate skin testing regime followed by the seemingly highly scientific desensitization period necessitating many office visits carries the opportunity for suggestion to play an important part. We are all familiar with the effect of placebos and one wonders about the possibilities of success should sterile water be used to replace the extract, with the general regime kept the same in all other respects. The following abstract from the November 1933 *Journal of Nervous and Mental Disease* describes the possibility of considering the effect of psychic stimuli.

(1) "It has long been thought that psychic stimuli influence the occurrence of asthmatic attacks, but owing to the recent interest taken in

the part played by allergy in this and similar diseases, the nervous factors have become neglected by most investigators. These authors have sought scientific proof of the influence of the mental state by producing a skin reaction with a specific allergen injected intracutaneously, and injecting a second exactly similar dose while the patient was under hypnosis. The size of the second reaction in relation to the size of the first could be increased or reduced at will, by suggesting to the patient that it should cause more, or less, itching and burning than did the first injection. All the factors were controlled carefully, and it was found possible to increase or reduce the area of the reaction by as much as 60-80 per cent, although the normal variations according to the authors are not more than 15 per cent. They conclude that even where a definite allergen is found to be the cause of asthma or urticaria, psychic factors should not be lost sight of."

A case of hay fever during the high point of symptoms was given trivalent typhoid vaccine along with five others in his family also exposed and six weeks later mentioned that he had been entirely free of all symptoms since the first injection and all of which occurred before the first frost. Specificity of the therapeutic agent could not apply in this case—the evident new factors were foreign protein shock of mild degree, or the counter stimuli of new emotional factors, related to fear of contracting the disease, inability to begin the new school year, lost opportunity to report for football practice, or uncertainty or waiting for blood culture reports. Either of these or both were responsible, not specific desensitization to ragweed which was supposedly known to be the cause of his four year old symptoms.

Another case in which a loop hole appears in the theory of allergy as the sole explanation is that of an eighteen year old girl who presented in the dispensary the complaint of having asthmatic attacks for the past four years. There were no physical findings of importance and the past history was irrelevant to the present complaint except that the attacks had always occurred on a Saturday. She was referred to both the departments of allergy and psychiatry and the former department continued with the case. In the skin tests the most pronounced reaction was to horse hair and questioning brought out that her mother whom she visited week ends had considerable of her furniture stuffed with this material. The girl lived with an aunt because the occupation of the girl's mother kept her away much of the time. When the girl was advised to avoid the mother's house until a change in furniture could be made the symptoms disappeared. It is hard to realize how a person could continue to enjoy such immunity for the other six days of the week consistently over a four year period in a city where the horse still has its times of usefulness. An understanding of the family romance of neurotics would have very probably brought out other factors more irritating than horse hair in the home of the mother.

With hay fever occurring in those types showing a greater than usual degree of mental and emotional acceleration, it was decided to evaluate this factor in the etiology by determining how often it occurred in types with a relative mental and emotional retardation. The following premise was offered to several prominent psychiatrists whose combined experience covers many years of observation. "The theory of pollen sensitization explains the mechanizm of the exciting cause in hay fever but disturbed emotional complexity is essential and basic and hay fever is often but one manifestation of such a disturbance. Considering dementia praecox to be that state wherein the least influence from environmental and emotional stimuli, except pollens, obtains; how often do the two conditions co-exist?" The responses all agreed in the opinion that dementia praecox enjoyed a definite immunity although cases of hay fever among employees in the same institutions were frequently seen. Several further agreed that the neuroses group had a relatively higher incidence of respiratory tract disfunctions than the population in general. The following abstracts are from letters received in answer to the above requests for information.

(2) "Insofar as I can recollect, I have never seen a case of hay fever in a frank case of schizophrenia. I know of one case, however, in a schizophrenic personality that never did quite break over into a psychosis. . . . . I have had a search made of the Quarterly Cumulative Index Medicus for a period of several years and can find no reference whatever to the combination about which you write. . . . . We also know that we find individuals hypersensitive to certain internal secretions. Then naturally anaphylatic reactions are apt to follow. For instance, we frequently see urticaria as a manifestation of certain types of nervousness. We feel that the psychoneuroses may be either a sensitization to emotion or sensation or to a combination of both. To accurately say where the division occurs in many cases is impossible."

(3) "Thank you for calling my attention to your experience regarding the apparent negative

correlation between hay-fever and schizophrenia. Your experience coincides with mine. My excolleague, Dr. J. M. Linton, who has had several years intimate experience with schizophrenia also checks. He told me yesterday that he had never seen the two disorders running coincidentally."

(4) "I think you are quite right in maintaining that hay fever is extremely uncommon in cases suffering from schizophrenia. At least in my experience I have not been able to observe any and I doubt if there are any cases in this hospital suffering from this disease who are showing symptoms of hay fever in spite of the fact that we are in a rural community with a great deal of goldenrod and ragweed."

(5) "Your letter is extremely interesting. In a series of some 385 dementia praecox patients who have been under intimate observation on a special Service devoted entirely to the care of dementia praecox patients, I can recall no case who has shown hay fever. I have checked the matter with our Chief Internist, who has been responsible for the physical care of these patients for the last three years, and he tells me that he has never seen a case of hay fever during this period. Over the same period, in this particular locality, I have seen at least two dozen cases of hay fever among our employees."

(6) "I have your recent letter asking my opinion concerning the association of dementia praecox and hayfever, and regret that I cannot give you any clear cut statistics on this subject. In fact I only recall two or three instances of this association occurring in this hospital where approximately one-fourth of our 800 admissions are cases of dementia praecox. I feel that your statement is reasonably correct—that there is no close association between the two. We do notice however in psychoneurotics many instances of erroneous diagnosis of hayfever being made on the basis of overlooked emotional factors."

(7) "I seem to remember a few patients in the past twenty years who had both conditions, but I should say that the combination was quite rare."

(8) "My recollection is that I have rarely seen a hay fever case among schizophrenics. . . . My general belief is that schizophrenics are free from many somatic illnesses save tuberculosis."

This concurrence in opinion would seem to show that pollens are certainly not the sole influence in creating the symptom complex referred to as hay fever and should not, as they do receive the bulk of attention in therapy. Dementia praecox types are not devoid of strong affective responses and do incorporate neurotic traits in their makeup but the former are not dominated by aggressiveness toward the environment and the latter are dropped when the psychosis begins. So if the dementia praecox can avoid hay fever by virtue of his ingrown personality sparing him the need for aggressive painful affects it might well be that a little desensitization to unstable emotional response through a more sound philosophy, environmental corrections; and the pursuit of hobbies for relief of tension would be of value incorporated in the handling of those needing hay fever therapy. The type most subject to hay fever are those of more than usual energy output, higher intellectual response and in their constant drive into situations requiring new adjustments it seems that the stability of their sympathetic-autonomic balance can not be retained.

Explaining the reason for hay fever solely on the basis of pollen sensitivity is opposed to psychotherapeutic procedure in that it tends to foster the patients desire and need for a scapegoat. It is realized that this report leaves the etiology of hay fever still in debate but the intent at this time is simply to suggest a further consideration of other than chemical factors, and to suggest that the allergists have an obligation to explain this apparent immunity of a certain group to strengthen their theories.

BIBLIOGRAPHY

1. Diehl, F., and Heinichem, W. The Nerve Factor in Allergic Reactions. (Munch. m. Woch., 76:1908).
2. Richardson, Horace K. Stockbridge, Massachusetts.
3. Hoskins, R. G. Harvard Medical School.
4. Kasanin, J. Howard, Rhode Island.
5. Sleeper, Francis H. Worchester, Massachusetts.
6. Ebaugh, Franklin G. Denver, Colorado.
7. Strecker, Edward A. Philadelphia, Pennsylvania.
8. Jelliffe, Smith Ely. New York, New York.

NEW ONE FOR THE BRAIN TRUST

"An economist," says the Omaha Journal-Stockman, "is a man who knows a great deal about a very little; and who goes on knowing more and more about less, until finally he knows practically everything about nothing; whereas, a professor, on the other hand, is a man who knows a very little about a great deal and keeps on knowing less and less about more until finally, he knows practically nothing about everything.—Leavenworth Times.

CHOLECYSTITIS DUE TO BRUCELLA MELITENSIS

E. L. MacQUIDDY, M. D., and JAMES W. MARTIN, M. S.,
Omaha, Nebraska.

The gallbladder as a focus of infection has been much discussed. It has been known for a number of years to harbor the typhoid bacillus. Simpson(1) has suggested that the gallbladder may be the focus of infection in certain cases of undulant fever. The authors feel that they have a case indicating that the gallbladder was a nucleus of infection in a case of undulant fever; the following case history is presented:

F. H., female, age 41, a teacher in a mountain school in Kentucky. Early in 1928 she developed lassitude, fatigue and a general feeling of malaise. She continued teaching until the spring term was finished. She spent the summer seeking relief in various climates. She was unable to take up her school duties in the fall. While under treatment in New York in the late fall of 1928, a diagnosis of undulant fever was made. She was given a course of vaccine treatment, without results. In the fall of 1929 she came to Nebraska and was given a second course of vaccine therapy, again with little, if any, results. In the spring of 1930 she placed herself under the care of a physician in Missouri who used, first, acriflavin intravenously and, later, an autogenous vaccine. During all this time she suffered from general malaise and a low grade temperature. She consulted the authors in the fall of 1932 for the first time. An agglutination test for Brucella antibodies was made and was positive in agglutinations up to and including 1:1,280. The rapid macroscopic agglutination method devised by Huddleson(2) was used. A blood culture made at the same time was positive for Brucella melitensis. The authors have found Huddleson's liver infusion media to be the most satisfactory in culturing organisms of the Brucella group(3). This was proven by the agglutinin-absorption test, using the method described by Carpenter(4). An autogenous vaccine was prepared from this organism. A course of injections of this was given with quite marked amelioration of symptoms, yet she was never completely free from temperature for more than a three-day period of time. The vaccine was made to contain approximately 25 billion organisms per cc. and injections were begun at .1 of 1 cc., increased up to .6 of 1 cc. An agglutination test made at the end of this course of treatment was positive in dilutions up to and including 1:320. We offer no explanation of the lowering of the titre, simply stating our results.

The patient was dismissed and instructed to return in four months in order that the results of the treatment, if any, might be observed. She returned with almost the identical symptoms presented at her first visit. Blood cultures, repeated at this time, were again positive and agglutination was positive in dilutions up to and including 1:1,280. A second vaccine was made, increasing the strength up to approximately 50 billion organisms per cc. The course of treatment given was lengthened and the final dose of the vaccine increased to 1 cc. Following this course the patient was decidedly improved but at times ran a low grade temperature. The agglutination test had again dropped to 1:320.

The patient began, about the middle of January, 1934, to have mild symptoms referable to gallbladder disease. It was our opinion that this condition might be attributed to an infection of the gallbladder due to the melitensis organism. We also felt that if the gallbladder were infected with this organism it might explain our failure to relieve the symptoms to the extent that we thought we should have.

On January 16, 1934, a duodenal drainage of the gallbladder was done. Without entering into controversy as to the merits or demerits of this procedure, we felt that its use was justified. We attempted asepsis, as far as possible, in this procedure. The usual A, B and C biles were obtained. The bile was allowed to flow into a sterile flask which was tall and slender, so that the different colors of biles could be easily distinguished. A specimen of the dark B bile was then transferred to liver infusion media. A variety of organisms was found, but among these was an organism whose morphology and gram reaction was that of the Brucella group. It was our desire to study the organism further, so we injected a fairly heavy suspension of the organisms into the abdominal cavity of a guinea pig. Blood was withdrawn from the animal on the eighth day and an agglutination test done against the organisms previously recovered from the patient's blood stream. This was positive in dilutions up to and including 1:2,560. As a check, the serum of the guinea pig's blood was agglutinated with other strains of Brucella and in each case the reaction was positive in high dilutions.

From the work done on this case, the authors suggest that, as far as this case is concerned, they offer evidence which would lead one to believe that the patient under consideration is suffering from a Brucella infection of the gallbladder.

BIBLIOGRAPHY

1. Simpson, W. M., and Bowers, L. G.: Surgical Aspects of Undulant Fever, Am. Jour. Surgery, 7:597-604. November, 1929.

2. Huddleson, I. F., and Abell, E.: Rapid Macroscopic Agglutination for Serum Diagnosis of Bang's Abortion Disease, Jour. Inf. Dis., 42:242-247, 1928.

3. Huddleson, Hasley, Torrey: Further Studies on the Isolation and Cultivation of Bacterium Abortus (Bang). Jour. Inf. Dis. 40:352-368, 1927.

4. Carpenter, C. M., and Boak, R. A.: The Laboratory Diagnosis of Undulant Fever. Jour. Lab. and Clin. Med., 15:437-443, 1930.

MILK SHORTAGE

The doctor was holding a clinic, examining children of school age. One youngster, aged six years, was underweight. The doctor began to make inquiries as to his diet, and the following dialogue took place:

"You don't drink milk?"

"Nope."

"Live on a farm and don't drink milk at all?"

"Nope, we ain't got hardly enough for the hogs."—Ex.

"Nurse," said the patient, "I'm in love with you. I don't want to get well."

"Don't worry; you won't," she said cheerfully. "The doctor is in love with me, too, and he saw you kiss me this morning."

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor.....Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman.....Madison
A. F. Tyler.....Omaha
B. F. Bailey.....Lincoln
R. B. Adams, Ex Officio.....Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. XIX June No. 6

REIMBURSEMENT FOR HOSPITALS FOR CARE OF INDIGENT INJURED IN AUTOMOBILE ACCIDENTS: THE OHIO LAW

Some time ago (June, 1932) we published an editorial touching upon the need of providing some means of reimbursing hospitals and physicians for the care of indigent persons injured in automobile accidents. It was estimated that in 1931 the hospital bills for the highway accidents amounted to $24,000,000, forty percent of which is uncollectable. At the same time it was estimated that an equal amount is the value of medical and surgical services and that forty percent remained uncollectable. The total loss of hospitals and medical service was therefore estimated to be about $25,000,000 for that one year.

The State of Ohio, in 1933 passed a law providing for the payment of hospital care to indigent injured in automobile accidents. So worthwhile is this law that we give it here almost in its entirety.

This law should go a step further to include necessary and reasonable physicians' fees, on about the same basis as Workmen's Compensation fees, for the same class of injuries treated, and with the same provisions as outlined for hospitals.

It appears to the writer that there are two methods of approach in this matter—The Ohio plan herewith given or compulsory indemnity insurance for all licenses, payable in case of accidents to hospital and physician as their interests may appear.

The medical profession and hospitals should rise in their might and demand some recourse from an intolerable situation.

AN ACT

To provide reimbursement for hospitals on account of expenses of the care of indigent persons injured in motor vehicle accidents and to amend sections 6291 and 6309-2 of the General Code.

Be it enacted by the General Assembly of the State of Ohio:

DEFINITIONS

Section 1. For the purpose of this act:

"Motor vehicle injury" means any personal injury suffered by a human being and caused by the operation of a motor vehicle, whether the injured person be the operator of such motor vehicle, a passenger in the same or in another vehicle, a pedestrian, or whatever be the relation of such injured person to the operation of such vehicle; and whether or not such motor vehicle is under the control of a human being at the time of such injury.

"Hospital" means any institution, not organized and/or operated for profit, and registered with the state of Ohio, department of health, which receives and cares for patients suffering from motor vehicle injuries, the per diem cost of which care shall be ascertained and certified in the manner provided in this act.

"Per diem cost" means the per diem cost of caring for a patient in a hospital as determined by the industrial commission of Ohio for the purpose of the laws which it is required to administer.

"Indigent patient" means a person who has suffered a motor vehicle injury, is received and cared for in a hospital, is unable to pay for the cost of such care and whose account therefor remains unpaid at the expiration of ninety days after the termination of such care; it excludes an employee suffering from a motor vehicle injury with respect to which he is entitled to the benefits of the workmen's compensation act of this or any other state or country. A person injured by the operation of a motor vehicle shall be deemed unable to pay such charges if it shall appear that, should an action be brought and judgment secured for the amount thereof against him, or against any other person legally responsible for his care, execution thereon would be unavailing.

INDUSTRIAL COMMISSION SHALL CERTIFY PER DIEM COST OF HOSPITAL

Section 2. Within thirty days after this act shall take effect the industrial commission of Ohio shall certify in duplicate to the registrar of motor vehicles and the auditor of state, respectively, the name, address and per diem cost of all hospitals in the state as determined by the said industrial commission for the purpose of the laws which it is required to administer. Thereafter, from time to time, said industrial commission of Ohio shall in like manner certify any additions to or subtractions from said list or any changes in such per diem costs which may occur. All claims made under this act shall be audited and paid in accordance with the per diem costs so certified and in effect at the time the charge shall have been incurred.

HOSPITAL SHALL FILE MONTHLY REPORT; CONTENTS

Section 3. Each hospital, in order to be entitled to the benefit of this act, shall make and file with the registrar of motor vehicles monthly, as of the last business day of each month, a report under oath showing the name of each sufferer from a motor vehicle accident, received into and cared for in such hospital during the month covered by the report, for whom such hospital may desire to make claim under this act; the time and place of the accident or occurrence in which the injury was incurred; the total number of days' care given to such sufferer in the month for which report is made and in any preceding month or months; the date of the receipt and discharge of such sufferer or other termination of such care; and such other facts or information as the registrar of motor vehicles may require in the form of report prescribed by him.

HOSPITAL MAY PRESENT STATEMENT OF CLAIM; CONTENTS

Section 4. At the time of making any monthly report each hospital may present a statement of its claim for reimbursement for the cost of the care of each indigent patient, which claim has matured within the month covered by the report then due or within any previous month. Each such claim shall be made in the form prescribed by the registrar of motor vehicles and shall show the following:

1. The name of the person to whom care has been given.

2. The number of days' care, with the dates of reception into the hospital and discharge or other termination of care.

3. The amount of the claim.

4. A statement under oath, showing the effort made by the hospital to collect the amount of the claim from the indigent patient, and the amount, if any, collected from such patients, or any other person on his account.

5. The affidavit of the indigent patient, if living, and the statement of a township trustee, municipal officer or director or like representative of a social agency engaged in the relief of the poor, having knowledge of the facts, showing that the indigent patient is unable to pay such hospital charges.

6. Such other facts and information as the registrar of motor vehicles may require in the form of claim prescribed by him.

7. For the purpose of the claim provided for in this section an indigent patient who is not otherwise able to pay such hospital charges shall not be deemed to be able to pay the same because a third person might be held liable in an action to recover damages on account of such motor vehicle injury, which has not been filed; but if such an action has been filed, the statement of claim shall show the fact and the registrar of motor vehicles may in such event suspend the determination of such claim until such action shall have terminated and may require such hospital to furnish such further information with respect to such action as he may deem necessary in order to determine the ability of the patient to pay the charges for which claim is made.

EXAMINATION AND AUDIT OF CLAIMS BY MOTOR VEHICLE REGISTRAR

Section 5. The registrar of motor vehicles shall examine and audit each claim presented to him under the provisions of this act. From the facts and information contained in the claim, the monthly reports of the claimant hospital, the supporting certificates and affidavits, and such other evidence as he may require, the registrar of motor vehicles shall ascertain and determine, as to each claim, the folllowing facts:

1. Whether or not the claim is predicated upon care given to a person suffering from a motor vehicle injury as defined in this act.

2. Whether or not such person is able to pay the hospital charges for which the claim is made, within the meaning of this act.

PAYMENT OF CLAIM

Section 6. When and if the registrar of motor vehicles shall have determined that a claim presented to him under the provisions of this act by a hospital which has complied with said provisions is made in respect of an indigent patient as evidenced by his findings under section 5 of this act, he shall determine the amount of such claim in accordance with the per diem cost of such hospital as certified to him under the provisions of this act less any amount collected from the patient, and shall pay the amount so ascertained to the claimant from the "state maintenance and repair fund" available for his use and appropriated for that purpose. The registrar of motor vehicles may make monthly payments to each hospital entitled to receive the same covering all claims audited and approved by him within the preceding month.

DISAPPROVAL OF CLAIM

Section 7. If the registrar of motor vehicles shall disapprove any claim made under the provisions of this act, except as to the amount thereof, he shall notify the claimant hospital that the same has been rejected, and state in such notice the ground or grounds of rejection. In such event the claimant hospital shall be entitled to a hearing before the registrar of motor vehicles on the ground of rejection so specified, within thirty days after the receipt of such notice, and his decision thereon shall be final.

PROCEDURE IF PATIENT, OR PERSON LEGALLY CHARGEABLE, BECOMES ABLE TO PAY

Section 8. Whenever it shall come to the knowledge of the managing officer of a hospital which has received payment of a claim under the provisions of this act that the patient in respect of whom such claim has been paid, or any other person chargeable by law with his care and support has paid, or is or has become able to pay the amount thereof, such managing officer shall notify the registrar of motor vehicles thereof, and, if such hospital shall thereafter make a monthly report and/or a claim for reimbursement under the provisions of this act, a reference to such paid claim in such form as the registrar of motor vehicles shall prescribe, showing the name of the patient and the amount paid, shall be incorporated in or attached to such report or claim. Whenever the registrar of motor vehicles shall otherwise acquire knowledge of facts showing that a patient in respect of whom a payment has been made as provided in this act, or any other person chargeable by law with his care and support has paid, or is or has become able to pay such amount thereof, he shall notify the hospital which has received such payment by letter addressed to the managing officer thereof, giving a brief statement of the facts thus coming to his knowledge and specifying the amount of such paid claim, the date of its prior payment, and the name of the person from whom the same may be recovered.

Within one month after such managing officer shall have given the notice herein required, or such hospital shall have received such notice from the registrar of motor vehicles, such hospital shall, unless the amount specified therein has been fully paid, collect such amount or the balance thereof from such patient or other person chargeable by law with his care or support and in default of such collection, file an action against such patient or other person chargeable by law with his care and support for the recovery of the sum so paid, as balance thereof. Such hospital shall in its monthly reports, or otherwise, advise the registrar of motor vehicles as to the collection of such amount, or as to the filing of such action and the proceedings therein; and, in the event of recovery of judgment therein, and if the amount of such judgment is not realized, shall show by certified copies of the proceedings that all legal remedies for the satisfaction of such judgment have been exhausted.

When notice has been given as required by this section, the registrar of motor vehicles shall deduct the amount of the prior payment made to the hospital affected thereby from any payment or payments to be made to such hospital under the provisions of this act on or after two months from the date of such notice, unless such hospital shall have advised the registrar of motor vehicles as herein provided that an action has been filed for the recovery of such amount from the patient or other person chargeable by law with his care and support, that such action has not been finally determined, and that there is reasonable ground for delay; or unless such hospital shall so advise the registrar of motor vehicles that such action has been prosecuted to final judgment and that all legal remedies for the satisfaction of such judgment have been exhausted without realizing the amount thereof.

ACTION TO RECOVER PAYMENT

Section 9. Whenever under the provisions of section 8 of this act the registrar of motor vehicles would be authorized to deduct the amount of a prior payment to a hospital from a subsequent payment or payments to such hospital, he shall, in the event no such subsequent payment shall fall due within three months after the right to make such deduction accrues, certify the amount of such prior payment, without interest, to the attorney general for collection from such hospital. Such amount may be recovered from such hospital in an action brought in the name of the state by the attorney general for the use of the "state maintenance and repair fund." Such action shall be brought within the time limited by law for the commencement of civil actions upon liabilities created by statute other than forfeiture and penalties and the cause of action in such cases shall be deemed to have accrued on the date on which such right of deduction arose.

Section 10. That sections 6291 and 6309-2 of the General Code be amended to read as follows:

PURPOSE OF ANNUAL LICENSE TAX

Section 6291. An annual license tax is hereby levied upon the operation of motor vehicles on the public roads or highways of this state, for the purpose of enforcing and paying the expense of administering the law relative to the registration and operation of such vehicles, maintaining and repairing public roads, highways and streets, paying the counties' proportion of the cost and expenses of cooperating with the department of highways in the improvement and construction of state highways, paying the counties' portion of the compensation, damages, cost and expenses of constructing, reconstructing, improving, maintaining and repairing roads, and for the use of the general funds of the counties and the townships and for the purpose of enforcing and paying the expenses of administering the law to provide reimbursement for hospitals on account of the expenses for the care of indigent persons injured in motor vehicle accidents, and as to the tax levied between the effective date of this act and March 1, 1933, for the purpose of providing poor relief in the various counties of this state. Such tax shall be at the rates specified in this chapter and shall be paid to and collected by the registrar or deputy registrar at the time of making application for registration as herein provided.

DISTRIBUTION OF REVENUE; STATE MAINTENANCE AND REPAIR FUND

Section 6309-2. The revenue collected under the provisions of this chapter shall be destributed as follows:

(1) Twenty-five per centum of all taxes collected under the provisions of this chapter shall be for the use of the municipal corporation or county which constitutes the district of registration as provided in this chapter. The portion of such money due the municipal corporation shall be paid into the treasuries of such municipal corporations forthwith upon receipt by the county auditor, and the remainder retained in the county treasury. In the treasuries of such counties, such moneys shall constitute a fund which shall be used for the maintenance and repair of public roads and highways, and for no other purpose, and shall not be subject to transfer to any other fund. "Maintenance and repair" as used in this section, includes all work done upon any public road or highway in which the existing foundations thereof are used as a sub-surface of the improvement thereof, in whole or in substantial part; and in the treasuries of such municipal corporations, such moneys shall constitute a fund which shall be used for the maintenance, repair, construction and repaving of public streets, and for no other purpose and shall not be subject to transfer to any other fund, provided, however, that as to such municipal corporations, not more than fifty per cent of the total funds available during any year from such source including the unexpended balance of such funds from any previous year, shall be used in such construction and repaving which shall be done by contract let after the taking of competitive bids as provided by law, or in the manner provided in the charter of any such municipal corporation.

(2) Five per centum of all taxes collected under the provisions of this chapter, together with interest earned by fees deposited by the treasurer of state as provided in section 6309 of the General Code, shall constitute a fund for the use of the several counties for the highway and road purposes specified in paragraph (3) of this section. Said fund shall be divided equally among all the counties in the state. Said fund shall be paid out on vouchers prepared by the registrar and warrants drawn by the auditor of state in equal proportions to the county auditor of each county within the state to be used for the purposes herein designated.

(3) Forty-seven per centum of all taxes collected under the provisions of this chapter shall be for the use of the county in which the owner resides or in which the place is located at which the established business or branch business in connection with which the motor vehicle registered is used, as the case may require, for the construction, reconstruction, improvement, maintenance and repair of roads and highways.

(4) Twenty-three per centum of all taxes collected under the provisions of this chapter shall be paid by the registrar into the state treasury to the credit of the "state maintenance and repair fund," as provided in section 6309 of the General Code.

The "state maintenance and repair fund" provided for herein shall be available for the use of the registrar in defraying the expenses incident to carrying out and enforcing the provisions of this chapter and (to the extent of a sum equal to nineteen cents for each motor vehicle registered in the state for each year) in carrying out and enforcing the provisions of this act to provide reimbursement for hospitals on account of expenses for the care of indigent persons injured in motor vehicle accidents and for the use of the director of highways in the manner provided by law. The general assembly shall make appropriations therefrom for such purpose.

THE FATE OF TRANSPLANTED BONE*

With few exceptions, bone is transplanted either to regain normal or to accomplish abnormal rigidity of some portion of the skeleton. It accomplishes these purposes:

1. By providing the best available material for promoting reparative and plastic osteogenesis,
2. By bridging defects resulting from the loss of substance, and,
3. By providing an autogenous splint for temporary interval fixation, until splinting is accomplished by newly formed bone.

The predominance of any one of these indications in each individual case determines the intelligent selection of the graft to be used for that case and the method of applying it to its new bed. If a gap is to be bridged or interval fixation is an important consideration, a massive full thickness transplant of dense cortical bone should be used. The same type of transplant is indicated for a recipient bed where its replacement by newly formed bone is likely to be retarded as in the presence of widely spread scar tissue. If, however, the graft is intended to have no supportive function and serves only to promote the formation of new bone, the thin osteoperiosteal grafts of Ollier or grafts of cancellous or spongy bone may be sufficient.

Only with a knowledge of the fate that transplanted bone undergoes, can clinical judgment in plastic bone surgery be directed with relative precision and as this fundamental knowledge has been increased by clinical and experimental investigation, the results from bone grafting have improved. The causes of certain failures and the means of preventing them have become more apparent. In point, reference may be made to the absorption of grafts resulting either in their mysterious disappearance or in the occurrence of spontaneous fracture, the fragments of the graft reuniting or failing to do so, giving rise to a pseudoarthrosis.

Contrary to prevalent opinion, bone, unlike skin, does not survive free transplantation. It is true that occasional bone cells at the periphery and a few osteogenic cells (osteoblasts) and fibroblasts in the cambium layer of the periosteum, in the openings and for a short distance up the Haversian and Volkman canals and in the superficial medullary spaces do survive transplantation under the most favorable circumstances, but the bone itself and the transplant as a whole undergo necrosis. Within a few days, most of the cellular elements show evidence of cell death and beginning autolysis. The nuclei are shrunken and stain poorly and within a few days or weeks, most of the cells have completely disintegrated and the lucunae are entirely empty.

Bone takes, not by becoming incorporated in its new bed within a few days as living tissue, but rather as a dead, highly organized calcareous mass which gradually undergoes absorption and replacement by new bone. The cells on the surfaces, which survived transplantation and cells of migration, proliferate rapidly, and simultaneously with the ingrowth of these fibroblasts, osteoblasts, and tufts of newly formed blood vessels, the necrotic bone disintegrates, but as it disappears, it is replaced by trabeculi of new bone. Although these two processes, absorption and replacement, go on simultaneously they often do not progress at the same rate. In massive transplants of dense bone such as full thickness tibial grafts, proliferation may exceed absorption whereas the reverse relation usually occurs in transplants of spongy bone such as that of the rib or ileum. If absorption progresses too rapidly, the graft may fracture or disappear before new bone has been laid down in sufficient quantity to replace it or to accomplish the desired result.

The more rapid absorption of spongy bone does, however, give rise to earlier and more luxuriant proliferation of new bone. Its structure permits earlier, more rapid and more extensive vascularization and invasion by granulation tissue than does dense bone.

Thus, one must look upon a free bone graft as a temporary splint, a source of bone salts which probably are utilized in the formation of new bone, a possible supply of osteogenic cells and a scaffolding upon which new bone can be deposited as the old necrotic bone is absorbed. To expect this and no more from free transplanted bone should be the basis of its clinical usage.

—J. Dewey Bisgard, M. D., Omaha.

LONG ARTICLES AND LONG BIBLIOGRAPHIES

Medical editors are not fond of lengthy articles. They realize that they occupy a disproportionate amount of the available space in the magazine. Not only that, but, except for the very few bookworms who devour every word of an article, the long article is rarely read by the busy physician who likes short pithy articles. The author who aims to have his production read and appreciated will cultivate a habit of writing a terse pointed article.

---

*Presented before the Omaha-Douglas County Medical Society, October 10, 1933.

Probably few medical editors are able to appreciate a lengthy bibliography. It is generally believed that lengthy bibliographies are "faked"—that the author has not read or consulted the vast number of authorities he quotes and this is particularly true of foreign authorities.

A writer in the *Medical Record* of recent date says:

"I have read articles by physicians who would give a bibliography of literature in other languages, as though they had read the original, that I did not believe even knew a single word in the language of the original reference.

"All such bibliography should be put before my blue pencil editorial. I would save some space after I got through with it.

"I do not object to a brief essential bibliography, but I do object to every writer trying to give a world's bibliography on every subject he writes on when, as a rule, he has never seen five per cent of the bibliography he gives and could not read fifty per cent of the original articles if they were put up before him."

The present economic stress makes it imperative that the medical editor conserve every available inch of space in his journal for matters that are more worthwhile for the average reader than bibliographies.

A. M. A. CONVENTION, CLEVELAND, JUNE 11-15

To have the benefit of a return rate of one-third fare, it will be necessary for each member to secure a certificate from the railroad ticket agent when he purchases his ticket to Cleveland. The certificate must be certified to by the Secretary of the American Medical Association, which may be done at the registration bureau, to be located in the Cleveland Public Auditorium, and must then be validated by a representative of the railroads. When the certificate is so certified and validated, it will entitle its holder to purchase a return ticket to his home, over the same route traveled to Cleveland, at one-third fare.

If the ticket agent at the member's home station does not have the certificate, he will furnish information as to where it may be obtained.

The certificate is not a receipt for money paid for a ticket, nor will a receipt entitle its holder to secure a return trip ticket at a reduced rate. Be sure to ask agent for a CERTIFICATE.

SHAKES IN NEBRASKA

"The subject of malaria in Nebraska is dealt with by Dr. F. A. Long, of Madison, in his new history of medical practice in Nebraska, to be published soon. The editor of this magazine has recollections on that subject. Chills and fever for weeks in the summer of 1872 on the old Seward County homestead. And the neighbors—how they shook! Where are the shakes today?

"(Note: The late Dr. R. H. Wolcott, in lecture on zoology at the University of Nebraska, stated that many of the dwellers in the lake region of central Cherry county are suffering from malaria. The shortness of the frost-free season helps mitigate the evil somewhat but the disease is unmistakable. The anopheles mosquito lives there.)"

—Nebraska History Magazine, April, 1934.

April 20, 1934.

Dear Doctor:

I have been in active practice in Valentine, Cherry county, for more than thirty-five years and have never seen one case of malaria that originated in this locality.

I was reared in the south and had malaria myself and think I would recognize it.

I have seen one case here but the patient had come directly from the swamps of Arkansas and after being here a short time his malaria was gone and has never recurred.

Very truly yours,
A. N. Compton.

A VIEW POINT ON SOCIALIZED MEDICINE

A columnist in the *Chicago Daily News* recently spent an evening with a distinguished surgeon and a distinguished scientist and brought away with him these reactions of the great men, which make interesting reading, whether one believes in state medicine or is opposed to it:

> These men talked a great deal about the growing idea of socialized medicine. Strangely enough, they were not opposed to it, nor did they fear regimentation. The surgeon advanced the idea that every member of society had a right to the best of medical care, regardless of his financial status. The scientist suggested that every doctor had a right to employment.
>
> Both felt that the limitation of doctors' incomes would have no effect other than to drive out of the profession the sort of doctor whose major interest is in fees. They though that the incentive to progress would still remain in the shape of honors and the regard of their colleagues.
>
> Their words were in contrast to those of a very rich man with whom I talked the other day. He was opposed to the idea of limited incomes—said that it would destroy all incentive. "Why," he asked, "should I gamble my money on a project which may be of benefit to the rest of society if I can't make anything out of it?"
>
> ### THE JOB'S THE THING
>
> He would not agree that men would still take risks, even if there were little profit involved, simply for the chance of earning distinction. He would not agree

that distinction is what human beings crave most; or that his fine house and cars and yacht were merely an effort to show the world that he had been successful in his ventures.

The fact remains, however, that to most men, the job is the thing. All men want a certain degree of luxury. They want cars, iceless refrigerators, good clothes and theater tickets. They want them, however, as incidents to the pursuit of an occupation they enjoy.

A doctor wants comfort for himself and his family. But few doctors, I think, would quit doctoring for twice as much comfort, if the change required that they be stockbrokers, for instance. And few lawyers, I am sure, would consent to drop their profession for no better reason than a larger income. You cannot hire away many preachers, artists, educators, merely by offering them higher wages. This applies also to trades. A toolmaker may, from economic pressure, turn to upholstering, but he will continue to think with nostalgia of his own craft.

TOWARD REAL INDIVIDUALISM

The only group which will commonly sell to the highest bidder, and deal as cheerfully in hides as in hammers, is the business group, and even that has its many individuals with a liking for the problem rather than the income. Gustavus Swift was less butcher than a fanatic bent on proving that refrigerated cars were not the lunacy that people said they were.

As civilization advances, I suspect that it will put more emphasis on motive and interest than on cash return. The great variety in human nature will then find its proper outlets, and we shall have a rugged individualism that is really rugged and really individual. The money incentive will be relegated to its place as a passing phase in the childhood of the race.

ORDINARY MIXED DIET, BEST

Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service, has this to say about diet:

"The best foundation for the all-around diet, either in times of prosperity or depression, is still to be found in the old dietary standbys—bread, meat, milk, fruits and vegetables.

"Within the last few years the attention of the general public has been focused upon foods and foodstuffs and nutrition in general to a remarkable degree. Many persons bearing the self-conferred designation of nutritionist, with limited knowledge of the subject, have been urging upon the public the inclusion or exclusion of various important articles of diet.

"Many of the food faddists have a sincere conviction that it is their duty to save mankind from himself as relates to the ills produced by improper diet and other evils."

William B. Duryee, secretary of the New Jersey Department of Agriculture, points out that there is no foundation for the notion that certain food combinations are harmful. Some of these supposedly injurious combinations are the eating of shell-fish with milk or ice cream or eating pickles and acid fruits with milk or ice cream.

Present-day nutritionists have found that acid fruits aid in the digestion of milk. Responsible food authorities unite in the doctrine that the major requirement for good nutrition is an adequate supply of the protective foods, such as milk, fruits and vegetables.

—United States News.

EDITORIAL PARAGRAPHS

A press clipping from out-state indicates that another specialty is looking for a spot in the sun —that of gland specialist.

A 100% attendance at a county medical society meeting in one of the better counties of this state was reported recently.

Dr. Harold Swanberg of Quincy, Ill., editor of a radiological journal, spoke before a number of county medical societies in Nebraska recently.

The Seventh Annual Graduate Fortnight of the New York Academy of Medicine will be devoted to a consideration of Gastrointestinal Diseases. The Fortnight will be held October 22 to November 2.

A well-known Nebraska physician has plead guilty to performing a criminal abortion resulting in the death of the patient and on his profer to engage in other business he was paroled and his license revoked, which is getting off easy.

Hospital Day was celebrated by St. Elizabeth's hospital, Lincoln, by an elaborate program and banquet, May 8. Dr. F. A. Willius, Rochester, Minn., was guest of honor and spoke on heart conditions. Over 100 physicians were present.

We read in the *Medical Record* of recent date that the birth rate in the United States is declining, appreciably. In 1915 there were 25.1 births to every 1000 of the population; in 1932 a preliminary report shows but 17.3 births per 1000 population.

Dr. F. L. Rector, field man for the American Association for the Control of Cancer spent the month of April in Nebraska making a cancer survey. His report will be made to the home office in New York and in time will become available for publication in this *Journal*.

Every reader noticed the array of Lincoln ads in last month's *Journal* complimentary to the annual meeting of the Nebraska State Medical Association. This month we present new ads as follows: Seiler Surgical Co., Omaha; Harding Ice

Cream Co., Omaha; Bureau of Credit Service, Omaha; Harris Laboratories, Lincoln.

Iodine is still the most efficient antiseptic in spite of the hold the newer beautifully tinted antiseptics have on the profession and the laity. The *New England Journal of Medicine* suggests that the objectionable features of Iodine tincture, due to its alcohol content, might be removed by using Lugol's solution which is an aqueous solution.

Dr. William Henry Welch, Baltimore, one of the greatest men of American Medicine, died April 30, 1934, aged eighty-four years. He was the earliest and foremost pathologist and bacteriologist in this country. He was connected with the Johns Hopkins Medical School from its inception in 1884. He was President of the American Medical Association in 1910-1911.

An interesting story about Dr. George W. Hawley who twenty years ago invented the Hawley Fracture Table comes from Colorado Springs where Dr. Hawley has for three years been a bedridden patient with tuberculosis. During his period of enforced confinement, he with the aid of mechanics, invented a fracture table that combines the x-ray and fluoroscope with it and makes possible watching and guiding the fracture during reduction.

The Madison County Medical society at a recent meeting at which there were present 19 physicians of the county declined to participate in medical aid under FERA rules and regulations. The fee schedule offered was:

The rate for office call (medical)	$ .50
Rate for office call, medicine furnished	.75
Rate for home visit (medical)	1.00
Plus 12½c per mile each way outside of town limits	
Rate for home visit, medicine furnished	1.25
Rate for OB including pre- and post-natal care shall be no more than	12.50

The editorial office of the *Journal* has a larger mass of high class material on hand at this time of the year than ever before in the history of the *Journal.* It therefore follows that authors must exercise patience. Economic conditions hold the *Journal* down to forty pages of reading matter. The annual meeting will afford about thirty-five additional papers which must be published in forthcoming issues. In due time we hope to accommodate all the authors who have so kindly contributed articles in recent months.

In a campaign against appendicitis the *Pennsylvania Medical Journal* for April furnishes an insert page consisting of forty stickers to be pasted on statements sent to patrons which read as follows:

WARNING
In the presence of abdominal pain
Never give a laxative or physic
Give nothing by mouth
Call your family doctor
Abdominal pain, cramps, or soreness which lasts for four hours is usually serious.
This warning is published by The Medical Society of the State of Pennsylvania.

According to an editorial in the *New York State Journal of Medicine* for April, Denmark has virtually conquered syphilis. The fight against syphilis began in 1790 by giving free treatment. Treatment was made compulsory in 1874 and free treatment was made compulsory in 1906. These regulations have reduced the cases to a minimum. Most of the cases now seen in Denmark come from abroad. The patient may select his own physician, but treatment he must have. If he refuses after two warnings he is reported to the sanitary police. A filing system follows patients for years.

Besides being scientific men, physicians are human beings, with human interests, ambitions, weaknesses, etc., as varied as mankind itself. There are those with a pleasing dignity, there are aristocrats, dudes, dandies; there are those who fail to inspire confidence, there are slouches, sluggards, slipshods; there are those who are never sure of anything, there are those who are too cocksure of everything; there are those who are systematic about all things and those who lack system in everything; there are those who are too much in a hurry and those who are too slow; there are men in the profession, men of outstanding attainment and culture, and there are those who lack almost every element of both.

A conference on Child Health and Protection was held at Lincoln on the 18th of May. A general survey on pediatrics was given by Dr. Clyde Moore, Omaha. Other topics discussed: Nutritional Problems, Dr. Howard Hamilton, Omaha; Pre-school Examination, Dr. F. S. Clark, Omaha; The Handicapped Child, Dr. W. O. Colburn, Lincoln; Cardiac Clinic, Dr. J. A. Henske, Omaha; School Health Program, Dr. E. W. Hancock, Lincoln; Tuberculosis, Dr. J. H. Murphy, Omaha; The Problem Child, Dr. H. Jahr, Omaha. Dr. Palmer Findley, Omaha, Maternity Problems; Dr. Earl Sage, Omaha, Maternal Mortality in Nebraska; Dr. Harold S. Morgan, Lincoln, Prenatal Care; Dr. H. E. Harvey, Lincoln, Lowered Birth Rate.

The Michigan State Medical Society is doing things. The society sent two representatives to Europe to study Health Insurance and medical care of the small income groups. On April 12 a special meeting of the House of Delegates met to consider the report of its representatives. As a result of the study made a Mutual Health Service set-up is proposed which shall be under the control of a Board of Governors consisting of three physicians, one dentist, one pharmacist, one registered nurse, two representatives of industries, and two representatives of the recipients of health service. The costs of the service shall be borne jointly by the employee and his employer. It is estimated that the cost per person would be $27.88 per year. Aye, there is the rub!

Health Insurance in England is discussed in the *New England Journal of Medicine* by Sir Henry Brackenbury: "It must be understood by American readers that the British health insurance system has from its beginning in 1912 included in its medical benefits only the services of a general practitioner in the patient's home or at the doctor's office; that it does not include the services of specialists or hospital care. In addition to medical benefits, cash benefits amounting to a part of the wages are provided the insured person for a specified period during sickness. All persons employed at manual labor, and all other employed persons with annual incomes of less than £250 are legally required to insure under the Act, these employees paying themselves approximately 40 per cent of the total cost, the employer paying about the same amount, and the state the remaining fifth. Over 15 million persons are thus insured under the law and about 15,000 physicians have elected to serve them under its provisions, these physicians ordinarily giving only a part of their time to insurance practice and carrying on private practice also."

OBITUARY

Charles C. Telleson, Wynot, Nebr.; Rush Medical College, 1909; well known physician at Wynot for 25 years; member Nebraska State Medical Association; veteran of the Spanish-American war; died May 4, 1934, as a result of an automobile collision, aged about fifty-seven years.

A widow, a daughter and three sons survive.

Harry M. Hepperlin, Beatrice, Nebr.; native of Pennsylvania; Keokuk Medical College, 1891; prominent surgeon of Beatrice for many years; founder of a hospital at Beatrice, now owned by the Lutheran church; chief surgeon of this hospital at time of death; prominent in the civic affairs of the community; prominent member Nebraska State Medical Association; died May 5, 1934, of carcinoma of the bladder, aged sixty-six years.

A widow, two daughters and two sons, of whom Dr. Harry M. Hepperlin, Jr., is one, survive.

William Torbitt, Lincoln, Nebr.; College of Physicians and Surgeons, Baltimore, 1903; druggist and physician at Bennett for fifty years; died May 13, 1934, aged eighty years.

A widow and two daughters survive.

Robert C. Talbot, Broken Bow, Nebr.; native of Danville, Ind.; Miami Medical College, Cincinnati, 1870; an early day physician and politician of Custer county; county treasurer of Custer county in 1884 and 1885; one of the organizers, about 1883, of the Custer County Medical society; died May 13, 1934, aged eighty-seven years.

A widow, a daughter and two sons, of whom Dr. W. E. Talbot, Fresno, Calif., is one, survive.

George A. Cassidy, retired, Fremont, Nebr.; McGill University College of Medicine, 1866; practitioner at Shelby, Iowa, until 1912, later at Manhattan, Kansas until 1932, when he retired and moved to Fremont; died May 18, 1934.

Surviving are a widow, a daughter, two sons, Dr. W. A. Cassidy, Omaha, and another in New Orleans.

TUBERCULOSIS ABSTRACTS

Pulmonary tuberculosis of the adult type is rare in children of school age. Though uncommon, the disease when it attacks children is serious. Our knowledge of the course of adult type tuberculosis in the child has been deficient because of the scarcity of published data. Therefore, a review of the cases of pulmonary tuberculosis of the adult type in children and adolescents who have been cared for since 1910 at the State Sanatorium at Westfield, Massachusetts, is particularly welcome. Extracts of the report follow.

CLINICAL PULMONARY TUBERCULOSIS IN CHILDREN

The 631 cases of adult type pulmonary tuberculosis among children and adolescents (under 18 years of age) treated at the state sanatorium since 1910 are divided into three groups.

1. In the first group are 200 cases admitted from March 1, 1910 to March 1, 1920. No roentgen-ray apparatus was available during this period. The diagnosis was established by the presence of tubercle bacilli in the sputum.

2. The second group comprises 195 cases admitted from March 1, 1920 to March 1, 1927. The diagnosis was made on the roentgen-ray findings, with or without positive sputum. All in this group reacted to the tuberculin test.

3. In the third group are 126 cases admitted from 1929 to 1930. The diagnosis was established as in the previous group. In all groups only patients under eighteen years of age are included.

SALIENT FEATURES

About 70 per cent of the 395 cases embraced in groups (1) and (2) were girls. The incidence according to age was about the same for both sexes. It was only 18 per cent for children 12 years of age or younger, which confirms the common experience that pulmonary tuberculosis is not a frequent disease in children before their teens.

Almost one-half gave history of contact and the author comments that while the search for tuberculosis among contacts will yield greatest results we should realize that a large number of cases have no known contact and that, therefore, every practical method of case finding should be used.

The mode of onset is almost impossible to determine, in fact the disease in a large percentage of cases progresses before any symptoms are noted. Cough (64 per cent) was the most frequent symptom, and weakness (14 per cent) was next.

Study of the stage of the disease on admission showed a gratifying increase as time progressed, in the percentage of minimal cases. Only 9 per cent of boys and 5 per cent of girls were minimal cases in the first group, while in the third group the ratio was 38 per cent for boys and 28 per cent for girls.

The low percentage of minimal cases in the first group is due to the fact that only positive-sputum cases were included in that group. When the state-wide school clinic plan was begun (1924) the percentage of minimal cases increased markedly.

PROGNOSIS IS SERIOUS

The prognosis of adult type tuberculosis in children based on the experience of the groups studied is gloomy and the prospects of bettering it are discouraging. Of 200 cases of the first group (1910 to) 1920) 158 are known to have died of pulmonary tuberculosis. It should be remembered that this group constituted an unfavorable series since all had positive sputum and 144 of the 200 were classified as advanced on admission.

In the 1920 to 1927 series results were somewhat better because diagnosis aided by the x-ray and tuberculin test was more precise, more rest treatment was given and artificial pneumothorax was used in five cases. Of the 195 cases of this group 125 had positive sputum on admission, 112 were advanced cases, 52 had cavities and 133 had bi-lateral involvement. One would not expect a good result from such a group. At the time of the study, 1932, 133 (68 per cent) were known to be dead. Of the 22 minimal cases none died in the sanatorium but 9 have died since.

TREATMENT

Patients of the 1910-1920 group were not given bed rest treatment unless there was fever or other symptoms. Gradually, however, rest treatment was extended and by 1927, at least one year of bed treatment was given to all pulmonary cases. While it is too early to give a detailed composite report of the later group it can be said that in the minimal cases the results have been very good—at least temporarily. In a considerable number there has been complete clearing as shown by x-ray and the patients are clinically well. Of 49 moderately advanced cases (admitted from June 1927 to June 1930) 11 died in the sanatorium and of 62 advanced cases 27 died. Apparently prolonged bed rest treatment has been very efficient in many minimal cases and in a few of the moderately advanced though the mortality of advanced cases remains very high.

Pneumothorax has been in use for the past two years. This offers hope of better results but unfortunately this treatment often cannot be used on account of bi-lateral involvement and adhesions.

In the face of the generally discouraging situation what can be done? The logical procedure is to find tuberculosis while it is early and curable. Clinics should be more widely conducted in the schools with the routine use of the tuberculin test and x-ray. Special emphasis should be placed on the examination of all children known to have been exposed to the disease. The public should be educated to the necessity of prompt treatment for every child in whom a diagnosis of pulmonary tuberculosis has been established.

Certain Aspects of Pulmonary Tuberculosis in Children, Roy Morgan, Am. Rev. of Tuberc., May, 1934.

AUXILIARY NEWS NOTES

May 10, Mrs. B. F. Williams, state president, entertained at luncheon the heads of her committees for the state auxiliary meeting. Plans for the convention were discussed.

* * * * * *

Members of the Tri-County Medical Society, comprising Hall, Merrick and Howard counties, with the morticians of Grand Island and surrounding territory, as their guests, held their regular meeting at St. Francis hospital, Thursday evening. Moving pictures depicting obstetrical, medical and surgical treatments were shown, and Dr. Glenn Geddes of the Geddes Funeral Home of Grand Island spoke on the subject of autopsies from the undertakers' viewpoint.

At the auxiliary meeting at which the president, Mrs. R. T. Hubbell of Wood River, presided, there was a display of health posters from the various grades of Junior High Schools, which will be sent to the State Medical Association Convention at Lincoln, and later will go to the national convention at Cleveland, Ohio.

—Mrs. John C. Thompson.

GYNECOLOGICAL RESEARCH

The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania, is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more children. Physicians who have knowledge of any such families are urged to communicate with Dr. Douglas P. Murphy, Gynecean Hospital Institute, University of Pennsylvania, Philadelphia, Pa.

THE SOCIETIES

One of the most intensive programs ever presented by the **Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society** was held at the Stratton hotel, Wayne, April 24, following a dinner attended by 77 physicians and their ladies.

The program:

"Bronchiectasis," Dr. Clarence Emerson, Lincoln.

"A Study in Cranial and Intracranial Injuries," (film), Dr. K. S. J. Hohlen, Lincoln.

"My Conception of Focal Infections of the Oral Cavity and Their Relationship to Remote Complications; Management of Morbid Processes of the Jaws; Reasons for Failures When Success Might Have Been Achieved; and Resume of Some of the Research Work During the Past Twenty Years," Dr. William Shearer, Omaha.

"Irradiation in Pelvic Disorders," Dr. Palmer Findley, Omaha.

Dr. Rector of American Society for Control of Cancer showed a film dealing with the work of the society.

The program lasted until midnight and the meeting adjourned to the tune "We Won't Go Home Till Morning."

The **Dawson County Medical Society** met in Lexington, April 9. Dinner was served at 6:30 o'clock at the Cornland hotel to the members of the organization and their wives. Following dinner Mrs. A. W. Anderson entertained the ladies informally at her home.

Dr. L. S. McGoogan of Omaha, was the principal speaker on the program after which the remainder of the evening was spent in discussion relative to the profession.

The **Dodge, Washington and Burt Counties Medical Society** held a meeting at the Pathfinder hotel, Fremont, April 30, the special feature being the showing of the Canti Film on Cancer by Dr. F. L. Rector, of the American Society for the Control of Cancer. A dinner preceded the meeting.

The **Southwestern Nebraska Medical Society** met at McCook on the 12th of April.

The afternoon session was held at St. Catherine's hospital when Dr. C. C. Tomilson, professor of dermatology, University of Nebraska, Omaha, conducted a skin clinic. About thirty cases were brought in by attending physicians and all were conducted through the clinic by Dr. Tomilson, who lectured on the various cases coming under observation.

The banquet was served at 6:30 and on the evening program Dr. L. S. McGoogan, assistant professor of obstetrics, University of Nebraska, Omaha, was heard on "The Induction of Labor."

Both programs were of outstanding value and were heard with interest by the fifty physicians present.

The May meeting of the **Madison Six County Medical Society** was held at Bloomfield on the 8th. Dinner was served to forty-seven physicians and their ladies in the basement of the Methodist church; program was given in the auditorium of the high school building.

An interesting case presentation was given by Dr. Morrow of the Norfolk State hospital. An inmate complained of bladder symptoms and palpation elicited a mass in the right suprapubic region. Sarcoma was suspected. An exploratory incision for purpose of a biopsy developed a nicely encysted hard doughy mass, which on being peeled out and sectioned proved to be the remains of a parafine injection made 17 years before to cure hernia. The bladder symptoms subsided.

Talks were given as follows:

Dr. Charles F. Moon, Omaha, "Practical Obstetric Hints."

Dr. R. Russell Best, Omaha, "Practical Considerations in the Diagnosis and Management of Some Lesions of the Anus, Rectum and Colon." (Illustrated by lantern slides.)

Dr. James P. Rigg, Grand Island, "Practical Consideration of Common Eye, Ear, Nose and Throat Conditions, With Particular Emphasis on Their Treatment by the General Practitioner."

The presentations did not belie their titles. They were practical points useful to the every-day practitioner.

A meeting of the **Hall-Merrick and Howard Counties Medical Society** was held at Grand Island the last part of April at which the special feature was the morticians as special guests. Following a dinner given by the Sisters of St. Francis, the subject of autopsies from the mortician's viewpoint was discussed. Dr. Andrew Brown of Central City, presented a paper on "Diarrhoeas of Children."

The **Omaha-Douglas County Medical Society** met in regular session April 10, with President Hamilton in the chair.

Dr. Thomas McCurdy presented an autopsy report on a case of "Malignant Tumor of the Adrenal Cortex." Dr. Russum discussed the case.

Dr. J. Dewey Bisgaard presented a case report on "Gallstones in a Child 9 Years Old."

Dr. John S. Latta was the first speaker on the scientific program and his subjest was "Histogenesis of Blood Cells in Explanation of Blood Disturbances." He showed many interesting lantern slides.

Dr. Levine talked on "Classification and Treatment of Anemia."

Dr. Rix, president-elect, took the chair and Dr. Hamilton spoke on a "Secondary Anemia in Children."

At the meeting of April 24, Dr. Edward S. Maloney talked on "Asthma in Children," showing many interesting charts. The paper was discussed by Drs. Henske and Uren.

Dr. Robert D. Schrock discussed "Bone Tumors," illustrating the various conditions with lantern slides.

Dr. W. B. Moody's subject was "A Survey of Amebiasis," and he gave a comprehensive review of the condition recently existing in Omaha and the campaign to control it.

The final paper on the scientific program was read by Dr. Richard H. Young on "Pituitary-Basophilism."

At the **Otoe County Medical Society** meeting, May 14, Dr. Waltman Walters of the Mayo clinic lectured on "Lesions of the Stomach and Duodenum, and Their Surgical Treatment." There were discussions of x-ray findings also, with a few reels of medical films.

The **Thayer County Medical Society** held its quarterly meeting at Deshler, May 17th. While the doctors were enjoying a roast pig dinner at the Wolf Hotel, Mrs. P. A. Reed graciously entertained the doctor's wives at a seven o'clock dinner at her home.

Following the dinner, Dr. M. F. Schafer, Alexandria, and Dr. P. A. Reed, Deshler, presented case reports on cirrhosis of the liver and purpura hemorrhagica, respectively.

It was decided to hold the next meeting at Bruning and make this a joint meeting with the dentists of the county.

—Rudolph F. Decker, Secretary.

HUMAN INTEREST TALES

Dr. S. McClenegan, Omaha, is reported ill at Rochester, Minn.

Dr. C. W. Edmonds, formerly of Sumner, has moved to Overton.

Dr. B. H. Baer was reelected mayor of Ashland at the spring election.

The Drs. Sandusky and Ragan hospital, Seward. has moved to a new location.

Dr. and Mrs. Chas. Lucas, Shelton, are on a motor trip to points east and southeast.

Dr. F. J. Murray, Omaha, recently spent a short time at the Hot Springs of Arkansas.

Dr. A. M. Poore has located at Doniphan. He is a Kenesaw product and this is his first location.

The partnership heretofore existing between Drs. Shook and Egermyer, Shubert, has been dissolved.

Forty dollars in cash and some cocaine were stolen from the office of Dr. A. N. Howley, Norfolk, recently.

Dr. A. J. Courshon, Chadron, discussed "How to Choose a Doctor" before a local fraternity last month.

Dr. F. O. Beck has become exalted ruler of the Omaha Elks, and also president of the Ad-Sell League.

Follow-up clinics for crippled children was held at Columbus and York under the auspices of the Elks.

Dr. E. J. Kirk, Omaha, spoke before the Professional Men's club on the "Problems of the Professional Man."

Dr. and Mrs. W. A. Schreck, Bertrand, made a trip to Oklahoma recently to attend the funeral of a relative.

A former Nebraskan, Dr. Eugene A. Gilmore, has been appointed Acting President of the University of Iowa.

Dr. P. H. Salter, Norfolk, was abed several weeks in April with an unusual blood picture, but made a good recovery.

Before the Young Business Men's association, Omaha, Dr. Palmer Findley recently advocated sterilization of the unfit.

To simplify matters the mayor of Holdrege appointed Dr. K. P. Palmer, county physician, to act also as city physician.

The new mayor of West Point, Dr. J. J. Kieffer, has announced that his salary as mayor shall be turned over to charity.

Dr. Perry Allerton, formerly of Tilden, now of Elgin, Ill., has recently been graduated from a flying school as a Flight Surgeon.

Dr. C. M. Swab, Omaha, had conferred upon him by the University of Pennsylvania, recently, the degree of Master of Medical Science.

Dr. Palmer Findley, Omaha, gave the oration before the Writer's Guild at Lincoln in May on the subject "The Doctor in Literature."

Dr. J. L. Bollman, Mayo clinic, spoke before the Caducean society of Creighton Medical College on the "Experimental Production of Gastric Ulcers."

Dr. and Mrs. Corwin Clarke, Jackson, Mich., visited his parents at Fairbury, Dr. and Mrs. H. L. Clarke, the fiftieth wedding anniversary of the latter.

Dr. John T. Meyer, of the University of Nebraska College of Medicine gave a talk before the Wahoo Lions club recently on Public Health Activities.

Dr. James Finnegan, formerly of North Bend, who went to Philadelphia about a year ago to do research work in ophthalmology, has been appointed resident physician of the Wills Eye and Ear hospital, Philadelphia.

Dr. Charles M. Swab, associate professor of ophthalmology on the Creighton medical faculty, was guest of honor at a meeting of the eye section of the Missouri State Medical society, May 10, at St. Joseph, Mo. Dr. Swab presented a clinic before the group during the morning and read a paper on "Ocular Complications of Gonorrhea," in the afternoon.

BOOKS REVIEWED

NEW AND NONOFFICIAL REMEDIES, 1934, containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1934. Cloth. Price, postpaid, $1.50. Pp. 510; lx. Chicago: American Medical Association.

New and Nonofficial Remedies, 1934, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the indexing started a few years ago is continued and its value even increased by some desirable simplification of cross references.

The council has made the usual careful revision of the book. The general article Lactic Acid-Producing Organisms and Preparations has been practically rewritten. The chapter on Arsenic preparations has undergone some revision, especially in the statement concerning Neoarsphenamine. The descriptions of Chiniofon and Vioform have been revised in the light of recent developments in the treatment of amebiasis. The article on Ethylhydrocupreine has been revised to delete references to Optochin Base, which has been omitted; Optochin Hydrochloride has been retained, being recommended only for external use. The description of Typhoid Vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vaccine in nonspecific protein therapy. A number of revisions of the Council's Rules have been made, particularly with reference to the names of products, which is one of the most frequent and troublesome of the problems with which the Council has to deal. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serums containing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1933. Cloth. Price, postpaid, $1.00. Pp. 188. Chicago: American Medical Association.

The main bulk of the volume is taken up with reports on products which the Council has found unacceptable for inclusion in New and Nonofficial Remedies.

THE MEDICAL PROFESSION AND THE PUBLIC. The American Academy of Political and Social Science, Philadelphia.

This is a paper bound volume containing a series of papers read at a meeting of the College of Physicians of Philadelphia and the American Academy of Political and Social Science in Philadelphia, February 7, 1934.

A series of ten papers were presented and the discussion was essentially a discussion on State Medicine from a number of angles. Very readable but wholly inconclusive.

ANORECTAL PAIN AND ITS CLINICAL SIGNIFICANCE

Lois J. Hirschmann, Detroit (*Journal A. M. A.*, Feb. 3, 1934), points out that pain characterized by sudden onset in the anorectal region points to trauma. Overstretching of the sphincter muscle as a result of the forcible expulsion of hard, impacted or scybalous stools is one of the most frequent causes of acute anal pain. Trauma is also caused by small swallowed foreign bodies being lodged in the anal crypts. An individual who has become constipated or who has ingested certain indigestible or insoluble substances, may suffer acute, even excruciating pain from the expulsion of stools containing these substances. Anal fissure presents sphincter spasm as its most frequent symptom. Occasionally a fissure or splitting of the lining membrane of the anal canal will be caused by sudden and unexpected body movement such as is produced by sneezing, coughing or undue muscular effort during bodily exercise or labor. Ulceration of the anal canal as well as of the anal crypts frequently is superimposed on the wounds caused by trauma. The frequent and erratic fluid movements resulting from hypercatharsis so weaken the mucous membrane and transitional lining of the anal canal as to render them more liable to ulceration and fissure than when put to any unusual strain. Anorectal pain of a more gradual onset or occasionally supervening on sudden acute pain may be caused by any congestive, inflammatory, ulcerative or infective condition. Pain of a dull steady character, aggravated by the passage of stools and persisting after defecation, is ofen produced by the presence of internal hemorrhoids. If the patient complains of pain that seems to increase in intensity and is accompanied by a pulsating or throbbing sensation with increasing difficulty in defecation, suppuration must always be borne in mind. Anorectal abscesses usually originate in infected crypts or from infected perianal hematomas. It must be borne in mind that anorectal pain may be indicative of pathologic changes in other organs contiguous to or impinging on the rectum or anal canal. In the male, a posterior urethritis, prostatitis or seminal vesiculitis may all manifest themselves by pain referred to the terminal end of the intestine. Prostatic abscess is frequently prone to make its presence known first during defecation. Vesical calculus and various types of cystitis may also cause rectal pain. Injuries or diseases of the coccyx or sacrum also manifest themselves by pain in this region. In the female, disease conditions of the fallopian tubes and ovaries will not infrequently give rise to rectal pain in addition to other symptoms, and an enlarged and adherent uterine fundus will give rise to pain during the passage of stools. Any pelvic or uterine inflammatory condition will give rise to these symptoms, and a hypertrophied cervix not infrequently will cause pain by pressing the rectum against the sacrum, causing a definite obstruction to the fecal flow. The pouching produced by rectocele is also productive of pain. Any condition characterized by frequent fluid stools is productive of pain of a burning character. Itching or pruritus ani may be produced by any of these causes and in addition may be produced by any local infection, irritation or traumatization of the peri-anal integument. Obstruction, bleeding, discharge and even a loss of weight may be noted before appreciable pain is experienced when a malignant condition occurs in the rectal ampulla. The administration of enemas as hot as can be borne, but not under any circumstances containing soapsuds, affords great relief. The enema should be administered through a soft rubber catheter. One of the best remedies to produce local anesthesia of inflamed or eroded surfaces is ethyl aminobenzoate. For prolonged anesthesia for the relief of pain, particularly that produced by an anal fissure or ulcer of the anal canal, the subcutaneous injection of a 2 to 5 per cent solution of quinine-urea hydrochloride is recommended. Anorectal pain calling attention to the parts early, as it usually does, is a mandate to the physician to make a complete examination, not only of the anus and rectum but of all the surrounding contiguous organs, in order to discover the cause of the pain.

CRADLE SNATCHING

(Syracuse Orange Peel)

First Kangaroo—Annabelle, where's the baby?

Second Kangaroo—My goodness, I've had my pocket picked.

SEVERE GRANULOPENIA FOLLOWING THE USE OF BARBITURATES AND AMIDOPYRINE

Clyde L. Randall, Kansas City, Mo. (*Journal A. M. A.*, April 7, 1934), reports a case of severe granulopenia following the use of barbiturates and amidopyrine and emphasizes the point that granulopenia should not be regarded as a primary type of blood dyscrasia until all possible etiologic factors have been eliminated. An apparent increase in the occurrence of granulopenia may be related to the widespread use of drugs containing a benzene derivative. His patient, a woman, aged 25, developed an acute and alarming leukopenia following the use of barbiturates and amidopyrine for the relief of a simple headache. The benzene chain contained in both drugs is possibly responsible for the severe reaction and the disappearance of the granulocytes from the blood. A number of similar cases have been reported recently. A difference may be expected in the reaction to benzene quickly absorbed from the alimentary tract, as compared to the type of benzene poisoning that may result from the prolonged, slow absorption that occurs in industrial exposure. Individuals are known to vary greatly in their susceptibility to benzene. Granulopenia following the use of barbiturates and amidopyrine may therefore occur only in those persons who are unusually susceptible to the benzene chain.

TREATMENT OF DECUBITUS WITH TANNIC ACID

According to Earl O. Latimer, Chicago (*Journal A. M. A.*, March 10, 1934), the gross similarity of decubitus to certain burns suggested the rationale of treating suitable lesions with tannic acid. Bligh treated an abrasion with tannic acid and Maddock used it to treat the surface from which Ollier-Thiersch grafts were removed. A fresh 5 per cent aqueous solution of tannic acid is used. Treatment is begun at the first sign of tissue disturbance, preferably before the skin is broken. The wound and surrounding skin are cleansed and all crusts, debris and macerated skin are removed. If a blister is present, the elevated epithelium is removed aseptically. Lesions that may be kept exposed to the air are sprayed every hour with the tannic acid solution, and between treatments the region is kept exposed to dry heat from electric lights or an electrical hair drier. Wounds that must be dressed to be kept clean or to prevent direct pressure are covered with sterile gauze, which is kept saturated with the tannic acid solution. Treatment is continued until a heavy protective coagulum is formed, which usually requires from twenty-four to forty-eight hours. Afterward no dressing is applied nor is sterile gauze used to keep the coagulum clean and dry. Healing occurs as in burns, and as the coagulum separates at the edge it is clipped away. Should it be necessary to remove the coagulum prematurely, it may be softened with sterile petrolatum. The presence of an infection is not necessarily a contraindication to this method of treatment. In such cases the wound is treated with some suitable antiseptic solution until the infection is controlled; then the tannic acid is applied. If during treatment an infection occurs under the coagulum, the crust should be removed, the wound treated as described and the tannic acid reapplied. The author concludes that the results in lesions of varying width and depth have been far more satisfactory than any other method used on control lesions. The results have been especially gratifying in lesions following cord injuries, bedridden diabetic patients and lesions under casts. Many of the arguments in favor of the use of tannic acid in the treatment of burns may be advanced in its use in the treatment of decubitus.

RECONSTRUCTIVE SURGERY AND OLD FACIAL BURNS

Howard L. Updegraff, Hollywood, Calif. (*Journal A. M. A.*, Oct. 7, 1933), believes that reconstructive surgery of old facial burns should be avoided if possible until complete healing has taken place. The possibility of loss or impairment of various special sense organs may necessitate earlier surgery. Adherent eyelids, nasal contours and ears are best released by the use of Stent grafts. The release of major contractions in areas difficult to immobilize and dress correctly may be accomplished by the use of intradermal grafts, tunnel grafts and small tube flaps. The basal metabolic rate should be checked and, if low, thyroid medication should be forced. Autogenous bacteriophage therapy is helpful if positive Rosenau tissue cultures can be made. Early roentgen therapy is of benefit following surgery. Endotracheal anesthesia is the method of choice in the reconstruction of old facial burns.

"I'll give my fortune to get well, doctor," said the big banker in a quavering voice.

"Sorry, sir," replied the doctor, "but I'll have to ask for better security."

ROSTER OF OFFICERS—1934

Joseph Bixby, Geneva, President	1935
George L. Pinney, Hastings	1935
William Shepherd, Rulo	1935
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1936
W. R. Boyer, Pawnee City, Chairman	1936
R. J. Lehnoff, Lincoln	1936
E. L. Brush, Norfolk	1936
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
E. G. Zimmerer, Chairman Medical Section	Lincoln
Morris Nielsen	Blair
W. J. Arrasmith, Chairman Surgical Section	Grand Island
J. W. Duncan	Omaha

ENTERTAINMENT COMMITTEE

Dr. Harry Taylor, Chairman	Lincoln
Dr. Chas. Arnold	Lincoln
Dr. Roy Whitham	Lincoln
Dr. A. D. Munger, Chairman Exhibitors	Lincoln
Dr. Harold Morgan	Lincoln
Dr. George Misko	Lincoln

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
A. E. Buchanon	Fremont
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. 19 Norfolk, Nebraska, July, 1934 No. 7

CONTENTS

Page

The Status of Irradiation in Living Tissue, Edward W. Rowe, M. D., B. Sc., F. A. C. R. ... 241

Traumatic Neurosis, George Neuhaus, M. D. 248

Classification of Anemias, E. Burkett Reed, M. D. ... 253

Fibromyomata of the Vaginal Wall, Albert F. Tyler, B. Sc., M. D. ... 257

Tumor of the Pineal Body: Case Report, Lloyd Ragan, M. D. ... 258

Report of Committee on Public Policy and Legislation ... 260

Report of Delegates to Milwaukee Meeting of the A. M. A. ... 261

Report of Nebraska Delegate to A. M. A. Meeting of Council on Medical Education and Hospitals, for 1934 ... 263

Installation of the President of the Nebraska State Medical Association ... 265

Page

Annual Legislative Proceedings, Nebraska State Medical Association ... 266

In Memoriam ... 270-271

EDITORIAL—

Newly Elected Officers ... 272

The Sixty-sixth Annual Meeting ... 272

A New By-Law—A Cancer Committee ... 273

The Declining Birth Rate ... 273

An Important Medico-Legal Decision by the Nebraska Supreme Court ... 274

The Effect of Cooking on Vitamins in Foods ... 276

Editorial Paragraphs ... 276

Obituary ... 278

Tuberculosis Abstracts ... 278

Nebraska Physicians at A. M. A. Meeting ... 279

The Societies ... 280

Human Interest Tales ... 280

THE STATUS OF IRRADIATION IN LIVING TISSUE*

EDWARD W. ROWE, M. D., B. Sc., F. A. C. R.,

Lincoln, Nebraska.

The science of radiology is the youngest specialty, but its youth is no measure of its importance to modern thought nor the healing art. Medical radiology is founded upon the fundamental sciences of physics and biology. It serves the physician in general practice and it is invaluable to every specialty. The application of the roentgen ray in the treatment of various pathological conditions began soon after its discovery. Today no branch in medicine boasts of more interesting literature or more worth while research. The growth of the specialty of radiology has been phenomenal.

It is easy to assign to Wilhelm Conrad Roentgen the discovery of the roentgen rays, and to Pierre and Marie Curie the discovery of radium, but it is a more difficult task to trace to the beginning the science of radiology. The genealogy of the roentgen ray presents a long trail, which if followed to infinity would lead to the very beginning of science. Contrary to the popular idea, the knowledge of the roentgen rays did not burst all at once upon the wondering world. For a long time scholars, though blindly guided, had been moving slowly toward the discovery. It does not detract in the least from the honors that belong to Professor Roentgen to state that the time was ripe for his discovery, and that his own work was built upon the labor of others. In fact, Crookes had the x-ray but did not know it. Roentgen not only had the ray but recognized it and gave the world a clear and concise account of its properties, and continued during his long life a leader in teaching and research in the same field.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, Nebraska, May 22-24, 1934.

The name of Roentgen will live forever with those of Harvey, Lister, Pasteur, and others who have contributed valuable discoveries to the progress of medicine.

It is not my purpose to enter far into the discussion of the physics of the roentgen ray, nor to describe apparatus, technique, the x-ray tube nor the principles of dosimetry. I shall try to answer an inquiry which is frequently asked of the radiologist; i. e., "What goes on in the body when x-ray treatments are given?" To answer this question intelligently, it is essential to give a brief general survey of the fundamental basis for radio-therapy from the standpoint of the physicist.

Roentgen rays, or x-rays, is a form of light occupying a place in the same spectrum with visible light and radio waves. Their properties are like those of any other light except varying in degree. All have common properties—reflection, refraction, polarization, interference, and the less familiar property of the photo-electric effect. Refraction is simple, recognized by all, especially the optometrist and microscopist. If the x-rays were refracted as much as light passing through water, they would be so distorted in radiographs as to render them useless for diagnosis. As we advance in the spectrum from visible light to x-ray, refraction disappears gradually to the vanishing point. Reflection becomes insignificant, but the photo-electric effect rises to a place of greatest importance. Fluoroscopy, radiography, therapy, and intensity measurements depend on the photo-electric effect.

To appreciate these differences of the waves in the different parts of the spectrum, one should try to place the whole spectrum on a single scale. If a scale of wave lengths were attempted, such a scale would be prohibitively long to include radio waves; or, if the x-ray region were included it would have to be microscopic in size. Neither can it be a scale of frequencies, for the opposite reason. The scale of octaves, like keys of the piano, gives the best idea of the whole electromagnetic spectrum.

Knowing the position of the x-rays in the spectrum, it is easier to explain the prominence given to the photo-electric effect. When the atom absorbs energy from light of any kind, it usually acquires the energy in a definite amount, the change coming like an explosion, rather than a continuous power. This amount of energy is called a quantum, and varies according to the frequency of vibration. If the quantum is strong enough it may eject an electron from the atom, and if near enough to the surface it may be ejected entirely from the body. Electrons thus ejected are called photo-electrons. Visible light gives quanta which are very weak. Ultra violet light gives stronger quanta. With x-rays, however, the quanta are so strong as to eject electrons from all materials. An x-ray photo-electron has so much kinetic energy that it penetrates many thousand atoms before it is slowed down enough to be caught by one of them. In so doing, it drives out a few thousand other electrons from these atoms, thus causing intense local irritation. It is for this reason that the effects by which energy of x-rays is made available are primarily those of their photo-electrons.

Although time is relative, progress in roentgen therapy has matured amazingly in thirty-eight brief years. Almost simultaneously with the discovery of the roentgen ray, treatment of various pathological lesions began. While certain principles controlling its laws of application were being formulated, treatment proceeded empirically. Pioneers were brave and bold and for their hardihood often suffered martyrdom or caused distress which was only relieved by the grave.

The first principle to be determined was the power of the ray to destroy bacteria. Eventually it was found that the ray had indirect bactericidal properties by acting on the tissues which were hosts to certain organisms, as in the well known effect upon furuncles and other skin lesions. In 1902 Pusey and Caldwell wrote in their monograph, "The Roentgen Rays in Therapeutics and Diagnosis," as follows:

> "The fact that organisms in living tissues can be destroyed by exposure to x-rays while the same organism in inert cultures are uninfluenced by x-ray exposures, proves positively that it is not the influence of the x-rays per se that causes destruction, but that the tissues themselves, doubtless under the condition of activity excited by the x-rays, play the important role in the germicidal process."

During the first weeks and months after the announcement of the discovery, knowledge of the dangers to the skin when exposed became general. It is said that Edison early turned away from experimental work in roentgen rays due to the unfortunate personal experiences of his colleagues whose work he was directing. By 1900 the histological processes of dermatitis caused by the Roentgen ray were described by Codinas, who collected a list of 170 cases. Before the turn of the century, superficial therapy in dermatology was established in this country and in Europe, especially in Germany.

The early equipment for treatment was crude and consisted mainly of the apparatus just as used in the experiment laboratory. Intensity, or dosage, was based upon fluoroscopic or photographic effect. Experience was the only basis for guidance. Even after an operator established his own technique, it could not be conveyed to another because of variations in equipment. From 1902-7 at least twenty methods for measurement of dosage were devised and used for a time. Of these, but one, in use today, has stood the test of time—the ionizing method which was first described by Roentgen in his second communication.

Improvements in apparatus, clinical studies, and research went on slowly in the first decade. It was not until 1913, when Dr. W. D. Coolidge brought out his hot cathode tube, that the greatest advancement in the science of therapy took place. By his contribution the control of the electronic stream was assured. From then on the results in the treatment of neoplastic growths and the wider use of the ray in other pathological states went forward by rapid strides. The treatment of fibroids began in 1903. Carcinoma of the uterus was treated in 1902. In the same year Caldwell, of New York City, published his technique for the treatment of carcinoma of the larynx, tongue, rectum, prostate, cervix uteri, and the vagina.

By the second decade radiotherapy may be said to have been founded on a firm footing. During this period the idea took a firm hold that different tissue, normal or neoplastic, possessed different degrees of sensitiveness to irradiation. The most important and fundamental researches which laid the basis for sound medical radiology may be summarized as follows:

1. In 1912 M. von Lane, W. Friedrich and P. Knipping, of Germany, proved the true character of the roentgen rays and showed they were refracted by crystals and similar to visible light rays except for wave length.
2. W. H. Bragg and W. L. Bragg, in England, determined the wave character of the rays.
3. C. G. Barker and C. A. Sadler described absorption and the nature of secondary radiation and the characteristic radiation from different substances.
4. Seeman designed a practical apparatus for measuring quality. By these methods the quality, or wave length, of the roentgen rays could be determined in a standard unit by wave length of light, the Angstrom.
5. Duane, of Harvard, had shown that the wave length of the beam of roentgen ray depended upon voltage. Then he defined the effective or average wave lengths as "the monochromatic roentgen ray that has the same absorption as the whole beam of rays in any particular case."
6. Duane and W. Friedrich had each been measuring the quantity, or intensity, of roentgen rays by measuring with an electrometer the amount of ionization produced in a unit of air. This idea of an electrostatic unit had been originally suggested by P. Villard, of France, in 1908. It was this concept which ultimately led to the development of a standard unit of measure for the quantity of radiation to be used with the description of the quality to express dosage in roentgen therapy.

From these physical researches it became known that the most important factor relative to the deep effects of the roentgen rays in tissues of the body under treatment was the scattered radiation in them and that the total quantity of this radiation depended on the quality (potential and filter). On this basis progress took place in the study of the scattering rays. Krönig and Friedrich in 1918, Holfelder in 1920, and F. Dessauer in 1921, and others, charted the absorption rate under various technical conditions, especially to imitate it in media simulating tissue. Later the isodose charts were created, giving equal intensity lines in these media.

In the last decade the most important contribution to the science has been the perfection of a dosimeter that may be employed during treatment to measure in roentgen units the total radiation applied to the body during treatment. The small air chamber of Fricke and Glasser devised in 1924 is now in use. Larger chambers for measuring the shorter waves have been more recently introduced. In 1928 a unit of measure was finally established. In France and Germany, and in the United States, the Bureau of Standards have independently worked out about the same thing. Finally in 1928, in Stockholm, the International Congress of Radiology arrived at an agreement whereby a dosage unit was established and defined by international agreement and named for the discoverer of the roentgen ray, the roentgen to be designated by the letter "r," and governments of many nations are prepared to calibrate and standardize various instruments in this unit. Practical instruments are now manufactured which are so simple, mechanically perfect, and constant, that the intensity of the roentgen rays which is applied to a patient during treatment can be determined with absolute accuracy.

So far as the physical and biological properties of radium and roentgen rays are concerned, they are similar in all regards, if produced in the same intensities with proper protection from the undesirable characteristics and may be discussed together. The roentgen rays may be produced in large and comparatively economical quantities, providing homogeneous irradiation to all parts of any region of the body. Radium has advantages. It may be stored conveniently when not in use, it does not deteriorate, it is especially applicable to small cavities and inaccessible parts, and it may be used locally in conjunction with the roentgen rays to augment local action. Because of the proven similarity between the two, they may be combined or interchanged in the treatment of many neoplastic growths.

> "When roentgen and gamma radiation are absorbed in living tissue they initiate a series of changes which lead to temporary injury of the cell or to their ultimate death. The first step is purely physiological; the quanta of radiation collide with electrons of the atoms composing protoplasm and displace them from their normal positions in the system or else remove them altogether. These changes lead to the next step. The atoms are no longer the same chemically. The protein substances are broken down into simple compounds which are, in a sense, foreign to the cells, since they are not normal constituents. As a result, the morphologic and physiological condition of the cells is altered. This effect may not appear at once: sometimes it is not observed for some hours or even days after irradiation has ceased. The time which elapses between the moment of exposure when the first physical changes begin, and the appearance of a definite reaction is the latent period. Obviously the length of this interval will depend on the dose and also on the kind of change which is chosen as an evidence of injury. Should the criterion be the first reaction which can be observed under the microscope in the living cell, the latent period will be short; if, however, an obvious and general reaction is selected, such as the death of the cell or the erythema, it may be very long." (A brief statement, hard to improve, by Chas. Packard, Columbia University.)

The physical changes are those of an injured cell and have nothing specific in their mode of disintegration. The same effects are seen whether the lethal agent is heat, ether, or other agents. Nor is there any difference whether the abnormalities are produced by the shortest x-ray, the grenz having a wave length of 1.0 to 2.0 A or by the gamma ray, of .05 A. Cell division is slowed up. Mitosis usually is completed and then stops. Injured cells tend to regain their normal conditions. The primary biological effects of radiation therefore, are, changes in the hydrogen concentration of protoplasm, in the permeability of the cell membrane, in viscosity, and in the respiration rate. The morphological effects which accompany them undoubtedly are secondary.

SENSITIVITY

Similar cells, even when maintained under constant environmental conditions, show wide variations in their sensitiveness to radiation, some dying after a comparatively small dose and others remaining alive after receiving a dose many times as large.

Bergonie's and Tribondeau's statement that sensitivity varies directly with the reproduction capacity of the cell and inversely with its degree of differentiation, is true only in a very general sense; there are many exceptions. The lymphocytes are highly susceptible, although their power of reproduction is very limited. Bacteria and yeast cells are resistant although they are comparatively undifferentiated, and are capable of long continued cell division.

Undoubtedly the physiological state of the cell at the time of irradiation is an important factor in determining susceptibility. Unfertilized sea urchin eggs, whose metabolic rate is low, are extra-ordinarily resistant, withstanding as high a dose as 31,000 r delivered at the rate of 520 roentgen per minute. But immediately after they are fertilized, when the metabolic rate is greatly increased, they are susceptible. These examples demonstrate that highly metabolic cells are necessarily sensitive.

There is also a close parallel between susceptibility and the state of hydration. This has been observed in protozoa, and plant seeds. Cells are most susceptible just at the time when active cell division is resumed after cessation of mitosis which follows exposure.

RECOVERY

Some cells which receive less than a lethal dose recover entirely. The protozoan paramecium can be given 50 to 60 thousand r and recovery is without permanent injury. It may stop moving and in a few hours appear perfectly normal.

A quantitative study of the recovery process in unfertilized sea urchin eggs has recently been made by Henshaw. The eggs are irradiated, with heavy dose of roentgen rays and then inseminated with normal sperm. When fertilization takes place directly after exposure the eggs divide but the first cleavage makes its appearance much later than in control samples. One of the effects of the radiation is therefore a marked retardation in the division rate. But if fertilization is delayed for an hour, the eggs during that time recover in a large measure from that effect and divide at almost the normal rate. Recovery in fact begins almost at once and its rate is independent of the magnitude of the injury.

A similar response can be seen in other cells whose physiologic activities are reduced. When developing Drosophila eggs are cooled after irradiation the proportion that hatches later is larger than it is when they are maintained at room temperature. So also when tissue culture cells are injured by heat they recover more rapidly in the cold than at normal temperature.

The common factor in recovery is the low reproduction and metabolic rate of the cells. And since these conditions are generally found in resistant cells, the conclusion may be drawn that their susceptibility is inversely proportional to their recuperative powers.

STIMULATION

Under the influence of the Arndt-Schultz law, the opinion grew that small doses might stimulate cell activity. Hence experiments were made to find out if this observation was true. Canti and others have shown that there is no direct evidence that weak radiations are able to cause stimulation.

Radiations are always injurious to the cells that absorb them. They act on proteins. changing them into substances that may be slightly poisonous. Should the surrounding tissues be uninjured they might react to such poisons and be stimulated to greater activity. Such a response would hardly be called a stimulation effect of the rays.

THE TIME FACTOR

Whether cells recover or die after irradition depends not only on the number of roentgens which they receive, but also on the intensity of the beam. As soon as the cell suffers, as by a beam of low intensity, the cell is more likely to recover because its recuperative powers may be great enough to repair the damage almost as rapidly as it is inflicted.

Holthusen believes there is no difference in the skin reaction to radium and roentgen rays if the intensity and length of exposure are the same in both cases.

Recasens illustrates these differences in susceptibility by an analogy. When a house begins to burn, the most inflammable objects go first, then those that are more resistant. But when the house becomes a furnace of flame, everything is consumed equally, regardless of whether some materials are slightly more resistant than others. So with intense doses, all tissues are injured while with prolonged weak irradiation even small differences in susceptibility are revealed.

EFFECTS OF DIFFERENT WAVE LENGTHS

One of the problems which occupied the attention of the early radiologists was that of the qualitative effects of different wave lengths. Experiments seemed to show that the soft rays produced reactions of a different kind from those of hard. They were caustic, quickly destroying superficial tissue, while the hard rays were credited with a healing action. But in 1915 Rost showed that the histological changes produced by a wide range of wave lengths are identical. Later work confirmed his observations; even in the fine cystologic effects no differences are found.

The opinion also was held that hard rays are more selective than soft. There can be no question that filtered gamma rays in doses of low intensity reveal differences in susceptibility between tissues. But Regaud has shown that this dissimilarity in action is not due to the quality of the beams but rather to their intensity. Roentgen rays of low intensity show the same power of selectivity.

Within the last few years the weight of evidence shows that all wave lengths are equally effective. The proof of this has been difficult because accurate methods of measurements were not applicable to both the short and the long rays. The size of the chamber used in the iontoquantimeter seems to have worked well up to a certain wave length, and then ceased to be active. Only recently have methods been improved, all of which seem to remove any doubt of the equal effectiveness of all different wave lengths.

Prym condenses into a very concise statement, his understanding of the action of the roentgen ray in a tumor bed:

> "From numerous histological observations we gain the impresssion that a successful roentgen treatment is characterized by the destruction of the tumor cells in whole or part, at the same time preserving the tissue forming the tumor bed. The quality and quantity of the radiation must be chosen in such a manner that as much tumor tissue as possible is destroyed while the blood vessels and the connective tissue remain intact. The important reparative reactions by the latter are, in all probability, mobilized and increased by the necrosis of the tumor cells."

From the researches of Bohn, Halberstaedter, Perthes, Jungling, Koernicke, and others, the following fundamental laws have evolved expressing the effects of irradiation:

1. Cells are variably radiosensitive to equal doses of irradiation.
2. Cells of tissue which is rapidly growing and proliferating are the most radiosensitive.
3. The time of maximum radiosensitivity of a cell is during its stage of division.
4. The cells of a tissue are more sensitive the more they approach an embryonal and undifferentiated state. They are more radio-resistant the more they approach the adult of morphology.

Through the studies of Ewing especially, the radiosensitivity of neoplastic tumors has become recognized and the following general principles appear to govern:

1. The more cells proliferate and the longer they pass through karyokinesis the more marked are the efffects of irradiation.

2. In the epidermoid tumors it is a clinical observation that the basal cell epitheliomas and the form known as intermediate tumors are more radiosensitive than squamous cell epitheliomas.

3. Tumors made up of lymphocytic elements such as lympho-sarcomas are more radiosensitive than adeno-carcinomas or cells made up of glandular tissue.

4. Epitheliomas from parenchymal tissue follow the sensitivity of the organ they arise from.

a. Embryonal tumors of the testicle (seminoma) are very radiosensitive.

b. In tumors of the breast, the radiosensitivity varies with the histologic structure.

c. Cylindrical cell epitheliomas developing from mucous membranes of such organs as the body of the uterus, rectum, intestine and stomach are quite radio-resistant.

d. Tumors of the kidney and liver are usually very radio-resistant.

5. Sarcoma—connective tissue tumors generally are less radio-resistant the more they differ from the embryonal state.

a. Sarcomas made up of lymphocytic cells and myeloid cells are quite radiosensitive.

b. Fusiform sarcomas made up of adult cellular elements of connective tissue are usually radio-resistant.

c. Osteochondromas and osteosarcomas are quite resistant to radiation.

6. Embryonal tumors developing from malformation and ebryonal rests are radio-resistant. These tumors include those of the parotid and so-called naevic cancers of Darier.

Although each type of neoplasm varies as to radio sensitiveness, the factors involved in eradicating neoplastic disease not only depend on the histologic make-up of the tumor, but also upon the active factors such as degree of invasion, extension of tumor, localization, and the general condition of the patient.

In planning a proper treatment all the fundamental facts must be taken into consideration, the irradiation must be delivered adequately in dosage, distribution and time. Only by care, study, and by careful administration of the proper dosage can the patient receive the full benefits of irradiation.

Following the administration of a sufficiently high dose of roentgen rays to the human body, there is a clinical response in an uncertain number of patients of a syndrome usually spoken of as "roentgen sickness." To some patients it resembles sea sickness. Mothers who have borne children, frequently compare it to the nausea of pregnancy. Numerous theories have been advanced to explain the phenomena, without the general acceptance of any. It is as far as we know the reaction of the body to the flooding of the organism with the products of cell destruction, following irradiation, which is, as pointed out, mainly a process of protein decomposition.

Changes in the blood composition have been studied. The sodium-chloride level of the blood has been observed by some investigators, by others the water content. Dr. Pohle recently published investigations which did not bear this out. The change in the cholesterol content of the blood was also put forward by some other investigators, but Dr. Pohle found by experiments on dogs that this could not be considered a causative factor. The calcium content of the blood also shows but little change. No final statement of the clinical value can be made. Considerable attention has been paid to the nitrogenous constituents of the blood. In some patients there is an increase in nitrogen content in the tissues, but not in the blood. In others, nitrogen content and uric acid in the urine increase. Dogs exposed over the abdomen did not show changes in hemoglobin, total non-protein nitrogen or uric acid. Changes of protein in the serum have been reported by many, but the findings are contradictory and difficult to explain on a rational basis. After a moderate dose of roentgen rays an initial fall of blood sugar takes place. In diabetes, irradiation of the suprarenals has, in a few cases, caused a temporary decrease in the blood sugar. The present opinion favors an indirect effect on the autonomic nervous system.

For twelve years it has been known that the coagulation of the blood can be increased temporarily by irradiation of the spleen with small doses of roentgen rays. Only about one-third to one-half of the patients will respond. Small doses are not effective. Moderate doses (100 to 175 r) are effective. Doses over 800 r lead to a retardation of the coagulation.

The sedimentation rate of the red blood corpuscles can be increased or decreased or remain unchanged following irradiation. Some observers report retardation; others a faster rate; and a third did not detect any typical influence.

A discussion of our subject, "What goes on in the tissues when they are treated by roentgen rays?" would not be complete without some reference to the effects of irradiation on hereditary material. We are interested mainly in the application of biological researches to man. Untoward results can only take place, if at all, in a limited number of patients who receive treatment. And as far as the hereditary effects, or those that are inherited, are passed on, they can only originate if the reproductive organs receive irradiation.

The genetists have contributed a large amount of information by their researches on plants and animal life. The first demonstration of a genetic effect by irradiation must be accorded to C. R. Bardeen, in 1907. He found that "the ova of the toad fertilized by the spermatozoa exposed to the roentgen ray developed abnormally." He concluded that, "The action of the rays must be on those unknown substances in the nucleus, which control the morphological activities in the cell." Apart from the action of radiation, which we will consider, no generally known means of producing, artificially, gene changes or gene mutations are known.

Others have extended their findings to the amphibias, fish, mammals, and plants. But these did not include observation on the transmission of abnormalities to later generations. Hence it remained to be determined if roentgen rays can produce gene mutations or any other inheritable variations of such kind as usually distinguish individuals or faces in nature from one another.

Work on Drosophilias has been the most extensive, due to the ease of propogation and the well known technique. Muller in the Texas laboratory, Henshaw in New York, F. B. Hanson in St. Louis, and others, have done extensive research with the fruit fly. The work of Weinstein, Stadler, and Goodspeed have proven the same principles of hereditary influence on plants.

The conclusions of the genetists rest on the plausible premise that the hereditary material of man is affected in a similar way to that of insects and plants. The first experiment to give critical evidence concerning the effects on mammals has been that of G. D. Snell, in 1933, working on mice in the Texas laboratory. Snell finds that a quarter of the functional sperm, after irradiation of about 400 roentgens carry chromosomal abnormalities of a type known as translocations, which are detectable through the inheritable infertility caused by them in the first and later offspring generations. He has demonstrated the resulting death of 50 per cent of the embryos in utero, when one parent comes from an affected line. The controls, which bred in equal numbers, gave only normal results. Gene mutations with morphologic defects are harder to demonstrate, but he has already found one (a misshapen spleen) correlated with dwarfism; this is about as many as would have been expected in an equal number of Drosophilias derived from a treatment of the same intensity. All in all, the experiments leave no doubt that in mammals roentgen rays affect the composition of the hereditary material much as they do flies. They justify us not only in using great caution regarding the treatment of the human reproductive cases in the child-bearing age. They require us to look not only to the present generation but to the generations that are to follow.

A brief recollection of the properties of the roentgen rays leads to the conclusion that the various pathologic conditions call for certain types of radiation. The profession is familiar with the terms superficial and deep therapy. In the treatment of superficial lesions, a radiation of moderate penetration is required, produced usually at potentials between 80 K. V. and 120 K. V. In this band of the spectrum filters of aluminum are essential to screen out the longer wave length. In deep therapy, the potential generally used is produced by voltages ranging from 140 to 200 K. V. By most radiologists 200 K. V. constant potential is considered the desirable voltage for the heaviest type of therapy. Copper is the customary filter in use, ranging in thickness from .25 cm. to 3 cm., producing a wave length of 0.15 Angstrom to 0.08.

Up to the present time, four principal methods of applying roentgen rays have developed:

1. The single massive dose.
2. The fractional dose.
3. The saturation method.
4. The prolonged exposure.

The single massive dose was a contribution made by Seitz and Wintz, of Germany. They thought in terms of "cancer dose, sarcoma dose, and sterilization dose," predicated by the theory that each type of cell, normal or pathological, possessed a lethal limit of endurance. One overwhelming dose of roentgen ray administered in as short a time as possible was given to destroy and eliminate the carcinoma. In certain types of tumors and in a surprisingly large number of cases this method produced striking results. But unfortunately we do not know the exact number of roentgens required to kill each cancer. Other methods have given better results and appear more refined. This method had its vogue; no one employs it today.

The remaining three methods should logically be treated as one, the fractional. For the dosage is given a part at a time extending over a period of days or weeks. Our own Pfahler has emphasized the saturation method, in which the dose is brought to one hundred per cent and a level of roentgenization maintained by adding daily, or over more extended limits, additional irradiation equal to the amount lost by tissue recovery. Coutard, of Paris, has introduced another refinement in technique, in which very small quantities are given over a long period. But careful measurements have shown that he has not given excessive doses after all. Modern therapy follows the fractional method, usually employing more or less rigidly Pfahler's saturation technique or in special cases the more prolonged technique of Coutard. In fact, the trend today in roentgen therapy is toward refinement of technique, with care for the patient, accuracy in the doses. The application of the roentgen ray to disease is as much an art as a science.

It is now possible to deliver any desirable wave length at any depth of the body. Further increase of the voltage above 200 K. V. is just shooting through the atoms with danger of biological destruction. The effect on the protoplasm is a matter of intensity independent of the wave length. The different beams have no selective action. From the engineering standpoint, it is possible to secure equipment of many million voltage. The physicists are using 5 million in their study of the atom. Due to the physical law of dispersion, it is not possible to gain much more penetration above 200 K. V. The curve of intensity, as shown in the depth dose, above this point flattens out so that but little more is attained. The slight gain may be otherwise obtained without this terrific cost in energy or expense, by the simple means of increasing the current, or by increasing the distance and the time factor.

Modern therapy is built upon the slow progress in research, biological and engineering. As usual, there are no long jumps, and it is unwise to discard the past experience. The application of irradiation must be kept within economical bounds as well as biological and physical experience. Further refinements such as shock proof units or water and oil cooled tubes will increase the safety to the patient, lessen the discomfort arising from roentgen sickness, and increase the safety of the normal tissues. The future progress lies in utilizing more fully what we now have, and in perfecting the methods and equipment at hand.

(Bibliography in Reprints. Discussion in a subsequent number.)

TRAUMATIC NEUROSIS*

GEORGE NEUHAUS, M. D.,
Omaha, Nebr.

A traumatic neurosis is a psychogenic, nonstructural nervous disease following soon after a physical injury. The steadily increasing number of accidental injuries of industrial origin or due to the automobile or other causes in conjunction with the increasing complexity of modern life have also increased the incidence of the traumatic neuroses to a degree where they have become a problem of the first magnitude. The only type of injury only rarely leading to the development of a traumatic neurosis are those received in the activities of the various sports. Cerebral concussion in sport is only exceptionally followed by a neurosis. In the 17 years of my association with the University of Colorado school of medicine I saw routinely many cases of accidental injury suffered in college football games among them several cases of concussion but never a traumatic neurosis.

These neuroses are of the greatest economic importance because they are compensable and thus impose a burden on the companies which furnish accident insurance but ultimately this burden rests on all persons carrying such insurance because their money furnishes the capital out of which all indemnities are paid.

Definite figures as to the number of cases of traumatic neuroses and the total amount of money paid out in such indemnities would be extremely interesting but are difficult to obtain. Some idea may be obtained from statistics published by Gaupp in 1929 relating to German conditions. Of a total number of 21½ million people carrying government accident insurance between 500,000 and 600,000 were receiving compensation for injuries received. The proportion of purely nervous disorders resulting from these injuries and compensated for varies according to different authorities from 1% to 4.15% of the total number of cases, giving a total of from 5,000 to more than 20,000 cases of traumatic neuroses in Germany receiving indemnities under the federal government plan of insurance.

But this number does not comprise all cases because it does not include the number of injured persons carrying private insurance nor the victims of railroad accidents. Gaupp states that of the accident cases in these classes from 30% to 50% develop neuroses. It seems almost impossible that these figures could be correct and doubtful if statistics from our own country would give anywhere figures nearly as high. But making all possible allowances for differences in laws and economic conditions the total economic cost of traumatic neurosis must be extremely high especially as such compensation is frequently paid over long periods.

---

*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 23-25, 1933.

But there is another aspect to this problem which may perhaps eventually be of greater importance than the economic which deserves careful consideration, the question what will be the ultimate effect on the morale of a large portion of our people if they receive compensation for purely psychogenic disorders.

The disability allowance paid until the law was repealed recently by our government for any non-service connected disease produced a situation which furnishes a partial answer to this question. During the 18 months of my work with the Veterans Administration I saw the number of cases of psychoneurosis steadily climb with the deepening depression and increasing unemployment.

Before going on with this subject I should like to say a few words on the subject of some post-traumatic syndromes which though they closely resemble true traumatic neurosis must be clearly differentiated from this condition as they are organic in nature and must be treated in a different manner.

These syndromes are seen in patients who have suffered severe head injuries with or without fracture of the cranial bones and at times even without receiving a scalp wound. These patients recover from the immediate effects of their head injury but when they have reached a stage where one can look forward to a complete recovery progress becomes stationary and they pass into a condition of chronic invalidism. The symptoms which they present resemble closely those of a traumatic neurosis and it is at times very difficult to come to a definite conclusion as to where to place these cases. Their symptoms in the order of frequency are as follows: headache, sometimes localized, at other times diffuse, sometimes severe but frequently described as a dull ache. Dizziness; various sleep disorders; nervous irritability, often associated with hypersensitiveness to noises; general weakness; ringing in the ears; loss of memory, actual or apparent only, in the latter case due to a disorder of attention.

Objectively very little can be demonstrated. At times one sees cases that appear a bit dazed or as though not fully awake. There may be hyperactive knee-jerks, various tremors as of the hands or eyelids, but these vague neurological signs unless supported by other evidence do not have much significance. Of course, if even slight differences in the innervation of the facial muscles of the two sides or persistent differences in the activity of the patellar or abdominal reflexes or a Babinski can be demonstrated then the case is frankly of an organic nature and not a neurosis.

In these doubtful cases spinal puncture with manometric reading at times helps us in arriving at a definite diagnosis, as the pressure in the organic cases is generally high. Repeated drainage may even help to improve the patient's condition.

At times an encephalogram will give valuable data as to the presence of organic lesions and may, like repeated spinal drainage, be therapeutically helpful. It is well, however, to remember Foster Kennedy's statement that ventriculograms may show deformities that do not necessarily occasion abnormal function.

And another caution should be remembered, that both spinal puncture and encephelography produce additional trauma and may increase the symptoms of a neurotic.

So much about the post traumatic organic syndromes.

Any accident resulting in trauma produces a certain amount of shock and fright aside from the actual trauma, that of course is self evident. The mere experienie of accident without any trauma, where one has got off scot free, is accompanied by shock and fear, which vary greatly with many circumstances as individual susceptibility, the degree of danger to the person involved, etc.

Fright and fear have physical manifestations, as shown by Cannon and others. They are the symptoms of disturbed autonomic nervous function. Some of these manifestations are, transient clouding of consciousness or even unconsciousness, dilated pupils which react poorly to light; the face is pale, blood-pressure is increased, the action of the heart greatly accelerated, the mouth is dry, etc.

These normal physical manifestations of fright pass off after a shorter or longer interval of time. If they are at all severe a few days in bed, a careful examination and assurance that nothing serious is the matter and the exclusion of visitors will restore normal conditions in a short time. But of the chances to spoil things there are many. A case seen a number of months ago demonstrates the development of a traumatic neurosis very prettily.

The patient, Myrtle M., was a young girl, 16 years of age, always, as the history showed, of an hysterical type—over emotional—but who never had been considered nervous. On a week-end excursion she was riding with a girl companion on a railroad gasoline motor car. An unusually abrupt stop was made and Myrtle was thrown forcibly against the back of the seat ahead of her striking it with her chest. She fainted while her companion who was standing in the aisle was thrown to the floor of the car. The fainting girl was soon revived by the conductor sprinkling some ice water on her face. The girls arrived at Myrtle's sister's home still rather shaken by their experience. The sister called a physician who found Myrtle with dilated pupils, a rapid pulse and evidently thoroughly frightened. A thorough examination revealed no injury except some tenderness over the anterior portion of the chest below the breasts. As she was evidently quite upset he ordered her to stay in bed, adding, that one could never be sure before the end of a few days how serious the consequences of such an accident might be, especially in a young girl. Myrtle later admitted that this remark frightened her considerably.

This was on Friday—on Monday, Myrtle returned to town accompanied by her sister who appeared greatly concerned about the patient. She went to school where she fainted during the afternoon session having in the course of the day gone over her experiences in telling of them to companions. She still had some tenderness and discoloration over the bruised area at this time. In showing it to some girls one of them remarked: "How lucky it did not strike your breast." She fainted again a day or two later. She was now considered, especially by her sister, to have suffered a serious injury; the sister urged Myrtle constantly to be careful and also began to express resentment at the railway company for having been so careless in the running of the train. The visit of the railway claim agent caused her to see an attorney who advised her not to sign any papers but to wait the outcome of the case. Myrtle now developed additional symptoms: headache, dizziness, palpitation, flashes of heat and cold, loss of appetite, sleepiness, general depression and frequent crying spells. At this stage the patient was sent to a hospital and given a thorough examination. This was entirely negative. The bruise over the lower portion of the chest was insignificant. Personality study showed the patient to be a somewhat over emotional girl, but intelligent and ambitious, anxious to graduate from high school the following spring and to enter the university the next fall. She was co-operative and followed with interest and understanding the analysis of her symptoms. She admitted that the remark of her friend—"How lucky it did not strike your breast"—had set her to ruminate about the possibility of a cancer developing later in life as she had listened to a cancer prevention lecture in school. She also admitted having felt some resentment against the company as her sister kept talking about the big indemnity they would have to pay her. The railroad company eventually paid her a small sum reimbursing her for her expenses and she left the hospital after a two weeks stay entirely well and has remained so since that time.

This case shows how a traumatic neurosis may develop out of the symptoms of fright and shock which accompany any accident with or without injury: add to these suggestions from friends, or auto-suggestions originating in the pondering over the case that perhaps it might have serious consequences; resentment at some one who was responsible for the injury and you have a full fledged neurosis before you know it.

During his convalescence the patient receives visits from relatives, friends and fellow workers who bring with their tokens of affection many suggestions—of this one who had such after effects from an accident; of another who was declared well by the company doctors and later developed fits. The patient begins to ponder that perhaps he needs a longer rest, that he is not really as well as the doctor keeps repeating. He often develops even paranoid ideas: the doctor is perhaps too much on the side of the company and wanting to help them rather than him, the patient. And then the injury was really due to somebody else's neglect, perhaps even of the company who failed to provide proper safeguards and worked their men too strenuously. Many a person who is but slightly injured knowing that he is insured by his company feels that he is entitled to compensation by reason of the accident entirely aside from any injury received.

This resentment and this paranoid attitude projects the responsibility not only for the accident and the beginning of the neurosis but also for the ultimate recovery from the individual onto some one higher up.

Many other factors, too numerous to mention in a brief paper enter. One individual may find himself in a situation that tends to become more and more unbearable. A man, e.g., was divorced and resented having to pay alimony to his wife. When he was accidentally injured he developed a post traumatic neurosis and held on to it because it enabled him to punish his wife whose alimony was reduced considerably in proportion to the divorced husband's diminished earning power. Another man may work at tasks beyond his intellectual or physical capacity. Or another may be obligated through situations outside his employment to go on with exhausting or dull work without deriving satisfaction from his work. Of course nobody wants to fail—but failure with psycho-neurosis is a different thing: one gains attention and sympathy from friends and relations who might have been rather indifferent before; one also gains rest, good care and often pecuniary advantages without having to work for these things.

Slight injuries are more apt to result in a traumatic neurosis than serious. Buzzard for instance finds it rare for a man who has lost an arm or a leg in a railroad accident to develop a neurosis on account of it. He already has a compensable injury. This corresponds with the experience of all neuro-psychiatrists during the war that severely wounded soldiers never developed a traumatic neurosis while suffering from their wounds but some of them did when the time of their final complete recovery and of their return to the front with its dangers and its horrors approached.

Among the predisposing causes of traumatic neurosis a thymo-lymphatic state, a certain amount of mental deficiency, alcohol, syphilis, advancing age with cerebrovascular lesions are often seen.

Personality defects, pre-existing hysteria or some intolerable situation; economic distress, a standard of living just over the borderline from dependency, domestic conflict. monotonous work with insufficient periods of rest and recreation are all factors that predispose an individual to the development of a psychoneurosis.

When the accident has happened the responsibility is shifted. Social practice increasingly attaches responsibility for injury, monetary reparation and recovery of health to an individual or group other than the injured. With the growth of this tendency goes an enhanced incidence of traumatic neurosis, increasing demands for compensation and on the other hand more justifiable suspicion of hysterical exaggeration or downright malingering.

The treatment of the traumatic neurosis is like that of any other neurosis, psychotherapy. Much can often be done in prophylaxis. It is an accepted practice in aviation that an aviator after a crash in which he was uninjured or but slightly injured immediately take the air following the crash. This has proved good prophylaxis against later development of neurosis: a similar practice often is successful in industrial life.

Thorough examination even when it is apparent that there is no actual trauma reassures the patient and renders him hopeful of speedy recovery.

At the time of accident psychological first aid is as important as physical, suggestion should be used to lessen fright and dispel fear. The medical man must be firm but not brusque or contradictory because such an attitude can create active hostility on the patient's part.

In the average industrial neurosis of any degree of severity the patient should be removed from his environment. If practicable a hospital is the best place for such a patient and a special ward for neuroses much more desirable than a general or surgical ward. All the attendants as well as the internes must know that a psychoneurotic must not be treated like a non-neurotic patient.

Of universal value in treatment are numerous methods of re-education especially when speeded up by the aid of energetic suggestion. Hypnotism, analysis, physiotherapy are all of use in properly selected cases. At times a short period of hospitalization is a great value. Electrotherapy is a sensible way of suggestion.

The most important factor in the genesis and in the cure of a traumatic neurosis is that of compensation. Almost all modern observers agree that one of the strongest factors in the production of a traumatic neurosis is the advantage the patient gets from his illness. The illness is wish-determined; to be sure the wish is unconscious otherwise the condition would be malingering. There are probably all degrees of awareness of this wish—from being completely unconscious to out and out malingering. But the wish to profit is present. When compensation is in no way involved. when none other than the injured person is responsible at law recoveries from neurosis are surer and speedier. Minogue's Australian figures are instructive, in 17 cases in which no claim for compensation was involved, there were twelve recoveries. In 23 cases involving compensation there were only 4 that proceeded to complete recovery. Similar figures from other authors could be quoted. That compensation tends to perpetuate a psychoneurosis is proved by the fact that our government still has to pay good money for service connected hysterias and neuroses 15 years after cessation of hostilities.

But Minogue's data just quoted show that not all mon-compensated cases recover. To what psychological causes this is due we are at present not well able to state.

The way in which compensation is paid also seems to influence the course of a neurosis. Collie contrasts the practice of Denmark and Germany. "In Denmark it is the practice to pay insured workmen lump sum settlements at a very early stage of their incapacity and in consequence 93.6 per cent recover from what in this country is known as traumatic neurosis. In Germany, however, where the sick man is entitled to a pension, only 9.3% recover from the same disease."

The ideas of the writers regarding compensation differ greatly; only a few advocate non-payment of any money; others favor lump sum payments, others pensions. They all agree that claims should be settled promptly, that indemnities should be small and that litigation, appeals to higher courts and prolonged legal fights are the worst thing that could happen to a psychoneurotic.

DISCUSSIONS

EARL CONNOLLY, M. D., (Omaha): In the differential diagnosis of traumatic neurosis in cases with a head injury, I think we should be very careful about labeling it "neurosis" unless we are sure there is no organic disease in the brain. When in doubt, it is safer to treat an organic disease where something may be done than an uncertain disease in which there is no treatment except suggestion. I believe an encephalogram should be used in the diagnosis of those cases with head injuries and skull fracture. In many cases, which have been diagnosed traumatic neurosis, we find definite lesions.

MILES J. BREUER, M. D., (Lincoln): I run into a good many of these conditions in consultation, and I have found two or three difficulties I should like to mention. Among the profession in general, there is not a clear distinction made between malingerers and patients with a post-traumatic neurosis. These two conditions are as far apart as the poles. The distinction is poorly understood. Post-traumatic neurosis is as much an illness as a physical injury. Whether or not it is compensable is a legal question in which I do not wish to become involved. But I think we should make the distinction clearly.

The second thing is there has been sufficient development in neurology and psychiatry so that the diagnosis of post-traumatic neurosis can be made on its own merits. The failure to find definite signs of organic disease, or the ruling out of organic disease, does not make a diagnosis of post-traumatic neurosis. If I find no evidence of organic disease, I do not feel entitled to conclude there is no injury. I might be more willing to say he might be malingering than to call it a post-traumatic neurosis, because the latter has its own picture quite as characteristic, with a definite series of symptoms and definite requirements for diagnosis—just as definite and clear as organic disease.

If this picture is not present and these elements do not fit together, we are not entitled to make a diagnosis of a neurosis. We are doing better to say, "I do not know." I dislike to make a diagnosis of neurosis unless it fits perfectly into the complete picture.

B. F. BAILEY, M. D., (Lincoln): I was much interested in this paper because I believe the greatest responsibility rests upon our profession in regard to these cases of anything we can have. I am very leary about a diagnosis of hysteria. As a matter of fact, the very first thing we should do with these patients I believe is, so far as possible, to isolate them from outside suggestions, even though coming from other members of the profession. The neighbor talks to the friend, and the friend talks to the patient. Nothing should be done to engender fear, but to assure them everything will be done to diagnose their case and know whether or not there is anything serious.

It is a question of diagnosis. If they have no organic traumatism, then we can assure them they will recover. We should not do it too soon. Very often there are adhesions, etc. We should remember we have to deal not only with the injury, but with a personality. Oftentimes fear is engendered by our own speech in regard to what might happen. The truth should be told to those nearest and dearest to the patient, but not always to the patient himself. That is not safe.

If we find it is purely a psychosis, we must go through a process of re-education. It is not easy, but it is the one way of bringing these people out from an everlasting fear of the greatest enemy of the human race.

So the first thing to do is to be absolutely sure of your diagnosis—at least as sure as the human race can be. Second, surround your patients with protection from fear—from suggestion. Third, arouse in them a feeling they do not want to ask compensation unless they deserve it. It is a question to no small extent in nearly all of these cases as to the honor of the patients—whether or not they would like to live on a dole. How many we find today who are willing to do that! In Lincoln, we had a Veterans' Hospital so crowded you could not get in. Today we have a much less number there. Many have gone there who should not.

In protecting people from disease, we must encourage not a fear of disease, but a safe life where they can avoid the development of these things. I have seen people worried to death because of fear of cancer.

Let us be more careful of what we say in giving suggestions to the patients of our fellows. But first let us beware of our diagnosis, and if personal re-education is necessary, let us do it to the end.

W. L. SUCHA, M. D., (Omaha): The question of traumatic neurosis is one that has interested me for some time, due to the fact I see so many people both for the plaintiff's attorney and for the defendant's attorney. In my mind it is a hard thing to decide whether a patient has a traumatic neurosis or is a malingerer. We must watch ourselves to keep from becoming cynical and branding all people who come to us with a complaint that we cannot account for, with physical findings, as malingerers.

Yet, on the other hand, I feel that as long as a patient is compensed, or he has a pending litigation in a case of personal injury, that in itself acts as a pseudo-neurosis. There can be no doubt about that. As far as this particular field of work is concerned, I have found this striking difference: I have removed a lot of internal semilunar cartilages for athletes. I have to remove the first for an athlete or private patient who did not get an excellent result. I have yet to remove the first one for a compensable case who ever would admit his nose was good. That has made a cynic out of me. I am beginning to doubt whether or not 99 per cent of the psychopathic neuroses are not plain, ordinary malingerers.

D. D. STONECYPHER, M. D., (Nebraska City): My thought was that our brothers in the legal profession are responsible for a great deal of the uncertainty about traumatic neurosis. Cases come to me from lawyer's offices pleading with me to find some organic lesion in the head traceable to an injury that occurred some time back, because they want compensation. It puts a doctor "on the spot" to find out whether there is injury which is suffered physically, or whether it is a pure neurosis. You are put to it to decide the question.

I believe there is a lesion in the brain that has not been described fully, traumatic in origin, which shows up as a definite bunch of scotomata in the form fields. I should like to hear that discussed, if there is anything to it.

DR. NEUHAUS, (closing): In regard to Dr. Breuer's statement as to a definite picture that corresponds to a psychoneurosis, of course, this is true in the majority of cases. But one sees in consulting work quite a few cases where the attending physician was very much in doubt, and where to my own mind the question was not easily settled, and could not be until I had made these tests and gone through the procedures Dr. Connolly suggested of an encephalogram, or at times only a lumbar puncture.

I saw a case recently where a man had suffered a severe traumatism of the head 6 months previously, evidently a severe case of concussion, where the spinal fluid pressure was 28 m.m. of mercury at the time of my examination. This came down only after repeated drainage.

We do not say that a psycho-neurotic is a malingerer. If he is, he is an unconscious malingerer. His unconscious wish for some advantage suggests to him that a neurosis is the proper thing to develop. The reaction to an unconscious wish is something entirely different from a conscious assumption of symptoms.

In the war, the advantage to be gained by severe injury or illness of any kind was plain. The man was protected from the dangers and horrors of the front as long as he was in the base hospital. The experience of all neuropsychiatrists was that the advantage to be gained from the neurosis was the usual motivating power in the production of neurotic symptoms.

A case is reported of an Australian soldier sniping in the trenches, an enemy bullet struck the sandbag used in constructing the loophole, and a little dust flew in his eye. He wiped his eye and went to shoot again and an enemy bullet came again and struck the stock of his rifle. He felt that the thing was getting pretty hot. There was engendered an unconscious conflict. He was known to be a fine soldier. He carried the honors of his company. His social instinct, or hero instinct, bade him stay and not show himself yellow. The instinct of self-protection bade him to step aside until the German got tired shooting at him. There was a conflict which another person would have settled by saying, "I'll not make myself a victim of this German. I'll wait until he gets tired shooting at me."

He became blind. He had to be led from the trenches and was taken to the base hospital where he was found to be hysterically blind. He was cured inside of two or three days by re-education and suggestion.

In that case we have an unconscious motivation. There is a wish fulfillment. The blindness protects his life. Yet you cannot call him a malingerer. He was known to have been a reckless soldier. But this situation was too much. He could not solve it, and his subconscious solved it for him. There is something to be gained by being sick, and the subconscious helps these patients.

CLASSIFICATION OF ANEMIAS*

E. BURKETT REED, M. D.,
Lincoln, Nebr.

INTRODUCTION

It is appreciated that to cover the subject of various anemias is more than can be done in a single paper. To have the proper concept of anemia one must know the various mechanisms that are operative in this symptom. In view of the fact that many of these mechanisms are not known, any classification of anemias must of necessity be incomplete. It should be understood that to have the proper grasp of the subject of anemia the various phenomena of the so-called clinical types should be known in detail. A classification only helps one to best bring the given case from relative chaos to relative order, so to speak. The author intends to present some of the practical classifications and also to point out the help that certain laboratory data gives in establishing the identity of the case.

Anemias include those conditions in which there is a reduction of either the amount of hemoglobin, or the number of red blood cells, or a reduction of both. Since the so-called normal of these two values cannot be positively established, it is better to use the definition suggested by Osgood, et al(1). They consider anemia as a decrease in either the red cells or hemoglobin or both below the normal limits for persons of the patient's sex and age group. This conclusion infers the important consideration of establishing normal blood values of the given sex and age group in respective communities. More recently certain other criteria of anemias have been established. Chief among these is the relative volume of packed red cells per unit of volume. So for practical purposes and to be more specific, a reduction of the volume index should be given equal importance with reduction of hemoglobin and red cells in defining anemia.

The division of anemia into primary and secondary type has been in good standing for many years. The simple laboratory procedure of determining the color index was used as the means of dividing these two groups; that is, if the color index were plus one, the anemia could be considered as a primary one; and if it were minus one, then it could be classed as a secondary anemia. Primary anemia implies that the cause is unknown; while secondary anemia suggests the opposite. Furthermore, primary anemia was used to denote an anemia originating in and primarily involving the blood and the blood-making organs. On the other hand, secondary anemia was a type which did not primarily affect the blood. Pernicious anemia and sometimes chlorosis were considered as primary anemias, and of course all other cases were considered as secondary types.

A great deal could be said against this classification, but the chief objection is that every case of anemia has a cause. If we insist on using the term primary, it should carry the new meaning that it has developed by virtue of our present day knowledge of the mechanisms of anemia. Davidson(2) says, "The new meaning of primary signifies a virtual deficiency of one or other of the factors necessary for normal blood formation, despite the ingestion of an adequate dietary."

---

*Read before the Lancaster County Medical Society, February 6, 1934.

In the light of this concept, Witts(3) offers the following practical division of the anemias:

1. Secondary—symptomatic of some other disease, chiefly:
   - (a) Hemorrhage
   - (b) Infections
   - (c) Toxemia
   - (d) New Growths
2. Primary—those which are essentially disease of blood-forming organs:
   - (a) Leukemia, or Hodgkin's disease.
   - (b) Hepato-lienal disease (Familial hemolytic icterus and Banti's disease)
   - (c) The hemorrhagic diseases (Ill-defined assortment of blood diseases)
   - (d) Anhemopoietic anemias (Passive hyperplasia)

Nutrition of bone is impaired, and ability to form red blood cells reduced. There are many conditions that give rise to anemia in this way, but the two most important are:

1. Iron deficiency.
2. Deficiency of anti-anemic principle.

Various laboratory criteria are used in making a diagnosis of anemia. Chief among these are: Determination of cell diameters, and various indices based on this result; the finding of polychromasia and its intensity; the study of a stained smear for various changes of cell morphology; the determination of the presence or absence of hydrochloric acid in the stomach; and testing the urine for urobilinogen, and the finding of the icterus index. Many investigators have so applied these criteria that valuable information as to the nature of anemia has been deduced. They form the basis of many laboratory classifications.

Let us first consider the question of polychromasia. Often one will find in the study of a blood smear from an anemic case variations from the normal staining tint of some of the red blood cells. This is commonly known as polychromatophilia. It is considered as a symptom of immaturity. Also, if so-called vital staining methods are used, reticulocytes may be found which are young erythrocytes containing reticular fragments, staining with vital stains. There is experimental evidence(4) that these young forms mature in the blood stream. Schilling(5) considers reticulocytosis, basophiliac punctation and polychromatophilia as one and the same thing under the heading of polychromasia. The age of these particular cell forms is said to be the same, and in the cycle of erythrocytic development they are older than the normoblast. Schilling(6) has devised a "thick drop" staining method that brings out the polychromasia and also gives what he considers a practical index denoting the degree of this phenomena. It is as follows:

p + —	1 - 2	nets per field
p + +	2 - 10	nets per field
p + + +	10 - 20	nets per field
p + + + +	20 or more	nets per field

The number of these immature forms may be considered as a clinical index of the state of activity of the bone marrow. A single determination should be looked upon as an expression of the erythropoiesis for that exact period, and should not be considered as an indication of the bone marrow potentialities. For practical purposes, then, it is well to know whether or not a given case of anemia is regenerative or aregenerative in character. A few of the practical applications are as follows:

1. There will be an increase in every simple anemia if the bone marrow is adequate; and in cases of hemorrhage the reaction will vary, depending upon the degree of anemia. It may rise as high as 15-20%.

2. In cases of hemolytic ictero-anemia, a high level is constantly maintained.

3. In pernicious anemia the degree of polychromasia will vary with the different periods of the disease. It can be used as an effective guide in treatment, as all remissions will be announced by an increase in the reticulocytes.

4. Substances that irritate the bone marrow, as lead poisoning, call forth an increase in the polychromasia.

5. In some other blood dyscrasias, as leukemia, an increase will be found.

6. In bone marrow inadequacies, and aphasias, very marked reduction will be found. In cases of pernicious anemia that have taken on aplastic tendencies, this will also be true.

7. There will be no increase in number in chlorosis.

Schilling(6) believes that certain cellular phenomena may be looked upon as regenerative and degenerative erythrocytic phenomena. On this basis he has devised a classification of anemic blood pictures. It is as follows:

GRADE	ERYTHROCYTIC PICTURES	
	A. Regenerative	B. Degenerative
I. Oligocytotic, without regenerative changes	Generally normal	Oligochromasia Poiklicytosis Microcytosis
II. Polychromatic	+ Polychromasia Macrocytosis	+ Basophilic punctation
III. Normoblastic	+ Normo- and erythroblasts	+ Nuclear fragments Normoblasts with basophilic granulation
IV. Megalocytic	Always mixed and hyperchromic	

By way of further explanation, Schilling(6) contends that a direct change in the circulating erythrocyte is possible only through degeneration. It causes distortion and destruction; that is, reduction of the red blood cells. In addition to this peripheral direct degeneration, there is present also a central, indirect degeneration, which disturbs the constitution of the erythrocyte by injuring the erythropoietic parent cells. All further changes in the erythrocytes in the blood picture are of a regenerative nature and are based upon pathologic entrance into the circulation of new cells.

No doubt the work of Cooley(7) on fragmentation (degeneration) will find a greater place in our future ideas of anemia.

Recently volume and saturation indices have been established as valuable aids in the diagnosis of the type of anemia. They probably have greater diagnostic value than any other laboratory methods. Capps(8) in 1903 was the first to report the method for calculating the volume of packed cells, and Haden(9) in 1923, brought out the importance of this method as a diagnostic aid in hematology. An attempt will be made to briefly define volume index and saturation index. The reader is referred to the original presentation(9) for technic, etc.

The volume index may be defined as the mean volume of a single red blood cell relative to normal, which is calculated by dividing the volume of packed cells in per cent of normal by the number of cells in per cent of normal; in other words, the volume index equals:

$$\frac{\frac{\text{cc. of unknown (packed cells)}}{\text{cc. of normal (packed cells)}}}{\frac{\text{Cell count of unknown}}{\text{Cell count of normal}}}$$

The volume index figures close to 1.00 in normal blood. Haden sets the normal limits as 0.90 and 1.10.

The saturation index may be defined as the amount of hemoglobin per unit volume of cell relative to normal. It is calculated by dividing the color index by the volume index; in other words, the saturation index equals:

$$\frac{\frac{\text{Number of grams of hemoglobin found in 100 cc.}}{\text{Normal number of grams of hemoglobin per 100 cc.}}}{\frac{\text{Number of cc. of packed cells found in 100 cc.}}{\text{Normal number of cc. of packed cells per 100 cc.}}}$$

The average normal saturation index equals 1.00.

A few of the diagnostic helps based on these calculations are briefly summarized as follows:

1. These indices are 1.00 or near 1.00 in the normal individual.

2. The greatest help lies chiefly in the differentiation of Addisonian anemia from the secondary anemia. Osgood(1) infers that a result of 1.25 may be considered as diagnostic of pernicious anemia. As the case improves, the index approaches the normal.

3. Capps(8) has confirmed by this test that the fundamental alteration in the red cell in pernicious anemia is an increase in size, and that these cells carry a full complement of hemoglobin. In other words, there is no true hyperchromia in pernicious anemia.

4. Osgood(10) considers chronic hemorrhage as the most probable cause of any anemia showing a saturation index below 0.85.

5. In anemias associated with chronic hemorrhage there is a decrease in cell volume and hemoglobin content. These gradually return to normal as therapy is effective.

6. The cell volume tends to be increased in those cases of accelerated blood destruction, not a constant observation.

7. In the clinical type of primary hypochromic anemia both indices are reduced.

Haden(9) has developed a laboratory classification of anemias making use of all three variants of the erythrocyte. That is, the difference in size, number, and hemoglobin content.

Number
- Hypercythemic=red cell count normal
- Normocythemic=red cell count within normal limits
- Hypocythemic=red cell count normal

Volume
- Macrocytic=mean corpuscular volume > normal (VI > 1.10)
- Normocytic=mean corpuscular volume= normal (VI=0.90 — 1.10)
- Microcytic=mean corpuscular volume < normal (VI < 0.90)

Hemoglobin Content
- Hyperchromic=mean corpuscular hemoglobin > normal (C I > 1.10)
- Normochromic=mean corpuscular hemoglobin=normol (C I = 0.90-1.10)
- Hypochromic—mean corpuscular hemogolbin < normal (C I < 0.90)

All the different types of anemia which may occur from this standpoint are:

Normocythemic
- Normocytic and hypochromic
- Microcytic and hypochromic

Hypercythemic
- Normocytic and hypochromic
- Microcytic and hypochromic

Hypocythemic
- Macrocytic and hyperchromic
- Macrocytic and normochromic
- Macrocytic and hypochromic
- Normocytic and normochromic
- Normocytic and hypochromic
- Microcytic and hypochromic

Wintrobe(12) gives a very practical outline of anemias based on differences in the size and hemoglobin content of the erythrocyte. He distinguishes four types of anemia as follows:

1. Macrocytic anemia. Characterized by an in-

crease in the mean volume and hemoglobin content. Example:
  (a) Pernicious anemia of Addison type.
  (b) Pernicious anemia associated with cases of sprue.

2. Normocytic anemias. Characterized by red cells of normal size and hemoglobin content. Examples:
  (a) Anemia due to acute blood loss.
  (b) Hemolytic anemias (malaria).
  (c) Aplastic anemias.

3. Simple microcytic anemias. Characterized by a moderate reduction in the size of the erythrocytes with moderate reduction in their hemoglobin concentration. Examples:
  (a) Anemias associated with chronic infections.
  (b) Anemias associated with toxic processes.

4. Hypochromic microcytic anemias. Characterized by variable reductions in the red cell count, but there is marked reduction in cell size and hemoglobin content. Examples:
  (a) Anemias due to chronic blood loss.
  (b) Hypochromic microcytic anemia of special types.

There is considerable to commend this classification. Using the information that one gets from the laboratory aids previously cited, and from a detailed history and a carefully made physical examination, plus the use of the fundamentals of this classification, one should place a given case of anemia into its proper category.

The etiological classification of any disease group is the most satisfactory. However, in the consideration of anemias this is not simple because of the complexity of causes, and their interrelationship, as well as the known fact that many of the mechanisms operative in the cause of anemia are not understood.

There are three fundamental causes of anemia: Namely, (1) anemias due to blood loss; (2) anemias due to defective blood formation; and (3) anemias due to abnormally rapid destruction of blood in the body. Haden(13) has described a clinical classification and has given the more common causes in each group. It is as follows:

I. Increased blood loss (acute or chronic)
  A. Mechanical loss:
    1. Uterine bleeding
    2. Hemorrhoids
    3. Peptic ulcer
    4. Disturbances of blood coagulation
    5. Trauma
  B. Accelerated destruction:
    1. Chronic hemolytic jaundice
    2. Acute hemolytic anemia
    3. Splenic anemia
II. Decreased blood formation
  A. Qualitative defect:
    1. Malignant growth
    2. Infection
    3. Chronic intoxication
    4. Metabolic disturbance
    5. Dietary deficiency
    6. Achlohydria (simple)
    7. Pernicious anemia
  B. Quantitative defect—a decrease in bone marrow by bone disease.

Ottenberg(14) has recently devised a new classification on an etiological basis. His conclusions are based upon the present improved hematological knowledge. A similar but less involved classification was previously set forth in a clinical manner by Witts(15). As a fundamental basis for his conception he contends that the normal maturation depends upon the presence of various substances at the different levels of cell development. For instance, if there is an absence of the "effective principle" of Castle at the level of the megaloblast, an anemia of the macrocytic type develops. Furthermore, if there is insufficient stroma-building and hemoglobin-building substances, chiefly iron, copper, and thyroxin, at a higher level of the cell development, hypochromic microcytic types of anemia will develop. Davidson(2) has also given a classification that embodies similar fundamental ideas.

The author wishes to present this classification of Ottenberg(14), with certain changes for your general usage.

I. Deficiancies
  A. Iron deficiencies
    1. Blood loss
    2. Hypochromic anemia
      (a) Chlorosis
      (b) Simple hypochromic anemia
      (c) Achlohydric anemia (primary hypochromic anemia)
      (d) Hypochromic anemia of pregnancy
    3. Simple nutritional anemia (of infants, particularly).
  B. Deficiency of specific anti-anemic principle ("Effective principle" of Castle)
    1. Pernicious anemia of Addison type
    2. Sprue
    3. "Pregnancy pernicious anemia"
    4. Bothriocephalus infestation (Small percentage of certain cases)
    5. Intestinal stenosis
    6. Certain cases of cirrhosis
  C. Nutritional deficiencies
    1. Vitamin lack—anemias of beriberi, pellagra, scurvy, rickets
    2. Loss of bile or pancreatic secretion
    3. Failure of intestinal absorption
      (a) Chronic diarrhoea
      (b) Celiac Disease
II. Injury to the blood making organs (Interference with blood regeneration)
  A. Toxic destruction of marrow
    1. Aplastic anemia due to
      (a) Radioactive agents
      (b) Benzol poisoning
      (c) Lead, mercury, etc.
    2. "Primary" aplastic anemia
  B. Failure of normal regeneration—depression of marrow
    1. Certain infections — particularly chronic infections
    2. Certain kidney diseases

    - 3. Certain unexplained aplastic anemias (constitutional inadequacy; lack of erythropoietic stimulus)
  - C. Mechanical replacement of marrow (myelophthisis)
    - 1. Osteosclerosis
      - (a) Osteosclerotic anemia
      - (b) Marble bone disease (Albers-Schonburg)
    - 2. Gaucher's disease
    - 3. Leukemia and Hodgkin's disease
    - 4. Malignant metastasis and myeloma
    - 5. Widespread osteomyelitis
- III. Interference with blood regeneration at some intermediate stage
  - A. Diseases of the spleen
    - 1. Banti syndrome
    - 2. Sclerosis or thrombosis of splenic vein
  - B. Diseases of the liver
    - 1. Cirrhosis (some cases)
    - 2. Prolonged obstructive jaundice
- IV. Disintegration of blood

This classification of Witts(16) seems to cover the subject of hemolytic anemias most thoroughly. A few changes are recommended.

- A. Congenital or familial group
  - 1. Hemolytic icterus (hemolytic icteroanemia)
  - 2. Sickle cell anemia
  - 3. Erythoroblastic anemia of infancy (von Jaksch, Cooley(17))
- B. Hemolytic anemia of pregnancy
- C. Secondary hemolytic anemia
  - 1. Certain pyogenic organism (septicemia)
  - 2. Certain protozoal infections (malaria, etc.)
  - 3. Chemical (potassium chlorate, snake venom, etc.)
  - 4. Transfusional
  - 5. Extensive burns
- D. Acute idiopathic hemolytic anemia
- E. Chronic idiopathic hemolytic anemia

This classification becomes involved, because of the fact that various mechanisms are operative in certain types of anemia. It is intended to place the case under the heading where the special factor operative in the cause is most important.

(Bibliography in Reprints)

FIBROMYOMATA OF THE VAGINAL WALL*

ALBERT F. TYLER, B. Sc., M. D.,
Omaha, Nebraska

Fibroid tumors of the vaginal wall are uncommon, only about 200 cases having been reported. They are generally found in the anterior vaginal wall but may be in the posterior or lateral walls. They are usually of moderate size but may attain enormous sizes as one reported by A. Pistuddi(1).

Vaginal fibroids are most frequently found in the third and fourth decades. They probably spring from the connective tissue and muscle of the Mullerian duct being, therefore, analogous to uterine fibroids. They are composed of both connective tissue and smooth muscle fibres. In one the connective tissue may predominate and in another the muscle tissue, leading to a microscopical diagnosis of fibroma or myoma depending upon the preponderance of the tissue in one or the other.

Vaginal fibroids may degenerate and become necrotic or even gangrenous or may undergo calcification. Necrosis takes place only in those which have broken through the vaginal mucosa and have become exposed to trauma, circulatory disturbances and infection. Vaginal fibroids are usually single but may be multiple. They are discrete and surrounded by a capsule, hence may be shelled out like the uterine fibroids.

CASE REPORTS

No. 42369. Miss E. B., age 28, referred by Dr. F. G. Kolouch. The patient was an unmarried virgin who came complaining that beginning eight months ago she menstruated every two weeks, each period lasting seven days. This continued for six months. During the past two months she menstruated regularly. Since the last period, however, she has continued bleeding.

Pelvic examination revealed a normal virginal introitus. When the finger was introduced it passed over a tumor mass in the posterior vaginal wall near the entrance measuring about 7.5 cm in diameter. This mass was covered with normal mucosa except at one place where there was a lobulated projection. The surface of this was occupied by an ulcer and was bleeding. On beyond this mass a normal cervix and uterus could be felt.

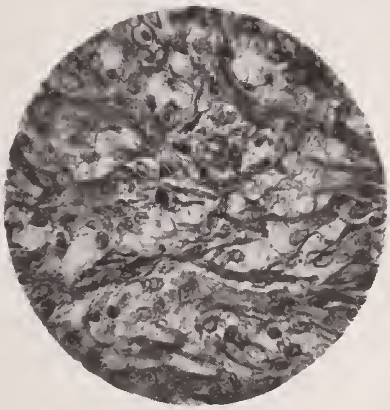


Fig. 1 42369 Miss E. B. Microphotograph of tumor removed from posterior vaginal wall. Note the dominance of smooth muscle with a little intervening connective tissue.

Since the patient was a young woman and because of the impossibility of making a differential diagnosis between fibroid and sarcoma without biopsy, a general anesthetic was given. The physical findings previously mentioned were confirmed. The mass was in the recto-vaginal wall and was dissected out without difficulty except that venous bleeding was hard to control.

---

*Read before the Omaha-Douglas County Medical Society, Feb. 13, 1934.

Dr. Eggers reported the microscopical findings as follows: "The tumor consisted of massively formed bands of smooth muscle with a little intervening connective tissue. There was no evidence of excessive or especially active current growth. The microscopical appearance was characteristic of fibromyoma." This patient represents the type in which a single tumor was found in the posterior vaginal wall.

Since the only tumor was removed for biopsy, radiation was deemed inadvisable because of bringing about an unnecessary menopause in a young woman.

No. 42480. Mrs. N. K., a widow, age 68, referred by Dr. John Thomsen. The patient stated that she passed the menopause at 50 years and had seen no bleeding since. In April, 1933, she felt pain in her right lower abdomen for which she consulted her physician. At examination the doctor found a nodular uterus extending well up toward the umbilicus. A hysterectomy was done followed by an uneventful recovery. The patient remained symptom free six months when she developed urinary frequency and tenesmus for which she consulted her physician again. Examination revealed more tumors for which she was referred for radiation.

Pelvic examination disclosed one tumor 2 cm in diameter in the anterior vaginal wall just cephalad to the urinary meatus. Beyond this one was another 5 cm in diameter attached to the anterior vaginal wall by a pedicle. This one was wine colored and edematous. In the left lateral vaginal wall were two more tumors measuring about 1.5 cm in diameter. In the right vaginal wall was another of the same size while a mass of discrete firm and spherical tumors could be felt in the right broad ligament.

The pedunculated tumor was snipped off for biopsy. Dr. Rubnitz reported the microscopical findings as follows: "Sections taken near the surface of the tumor showed extensive subcapsular hemorrhages with destruction and infiltration of the surrounding tissue. Sections taken from the interior of the tumor showed it to be made up of fibrous tissue interlacing and spreading out in different directions. Muscle tissue bundles were present here and there intermingling with the connective tissue stroma. The microscopic findings were characteristic of a hemorrhagic myofibroma."

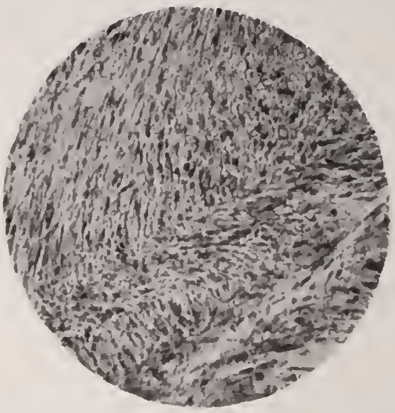


Fig. 2—42480—Mrs. N. K. Microphotograph of tumor removed from anterior vaginal wall. Note the preponderance of fibrous tissue with relatively few muscle tissue bundles.

This patient had already passed the menopause. The tumors were multiple and very difficult, if not impossible, to remove surgically so high voltage x-radiation was considered the method of choice.

REFERENCE

1. A. Pistuddi. A case of Enormous Fibromyoma of the Vagina. Clin. Ostet. 32:396-404, July '30.

TUMOR OF THE PINEAL BODY: CASE REPORT

LLOYD RAGAN, M. D.,
Seward, Nebraska.

Tumors of the pineal body are relatively uncommon and are difficult of diagnosis as such. Haldeman(1) in a review of the world literature in 1927 found only 113 cases. Van Wagenen(2) in a review in 1931 was able to find only 81 cases of pineal tumor, the location and limitations of which were given exactly. Since then a few more cases have been reported. Globus(3) reported 2 cases; Harris(4) and Elkington(5) each reported a case in 1932. In 1933 Vincent(6) and Guillain(7) report cases.

I feel the following case should be added to the literature of pineal tumors because it was accurately checked by autopsy and the diagnosis confirmed by an eminent pathologist.

REPORT OF CASE

R. L., a boy, aged 15, was first seen May 29, 1933, and complained only of diarrhea and vomiting of two days duration. His temperature was 99. Examination of the abdomen did not disclose anything beyond the presence of considerable gas. He was sent home and given advice about the treatment of the diarrhea. The father returned with the boy on June 4, 1933, with the complaint of vomiting still present. The diarrhea had ceased 24 hours after he returned home.

History: He now stated that he had noticed some blurring of vision several days before the vomiting started. He also noticed some headache starting about the same time. The headache seemed to vary between the frontal and the occipital areas. Slight vertigo had also been noticed and today he said he saw objects double at times. The appetite was not good. There had not been any recent illness. Past history unimportant.

Family History: This was very interesting from a standpoint of differential diagnosis. The boy's mother died of pulmonary tuberculosis 4 years ago. I had treated the father for syphilis 2 years ago.

Examination: A well developed boy, large for his age, whose pupils were widely dilated, they did not react to light but did react to accommodation. There was a slight ptosis of the right eyelid and also a slight external strabimus of the right eye. Eye ground examination showed a blurring of the optic disc but no choke. The visual fields do not seem to be contracted. There did not seem to be involvement of any of the other cranial nerves at this time. There was slight neck rigidity and in looking at objects he turned his head to the left, stating that he could see better that way. Diplopia was present, the false object seen slightly above and to the right of the true object. Vision was 20/100 in each eye. Examination of the heart, chest and abdomen did not disclose anything of interest. The Kernig was negative, the knee jerks and achilles were slightly exaggerated but equal. The abdominal reflexes were present. Babinski, Oppenheim, and Hoffman's were negative. Ankle clonus not present.

The temperature was 98.6; pulse 78; and respiration 18. The blood pressure was 105/60 and the urine negative. White blood cell count was 7,400. The spinal fluid was clear and under slight pressure. The cell count was not above normal. A fibrin clot formed on standing. This was stained for tubercle bacilli but none found. A Mantoux test was very positive. Blood and spinal Wassermann were negative. X-rays of of the chest and skull did not disclose anything unusual.

Progress: He complained of headache of varying degrees of intensity. Vomiting occurred frequently, preceded by nausea. It was never projectile. His spinal fluid pressure varied from slightly above normal to 50 mm of mercury. The highest cell count was 35. The temperature was mostly normal with an occasional rise to 99. The pulse average was in the low 60's. There was very little variation in the blood pressure. The optic disc varied from a slight blurring to a choke of 4 diopters. Dr. A. E. Bennett of Omaha, Nebr., was called in consultation and confirmed the diagnosis of brain tumor, probably a tuberculoma.

Eventually all the cranial nerves were involved. He developed a left sided weakness with positive Babinski. Oppenheim, ankle clonus and loss of the abdominal and cremasteric reflexes on the left side. His weakness gradually increased with stupor, blindness and loss of hearing. He died July 14, 1933.

The autopsy was performed by Drs. Geo. Covey and Floyd Rogers of Lincoln, Nebr. . . . "The lungs were of interest as explaining the positive Mantoux. The pleura of the left is entirely covered by fibrous tags . . . . in the adhesions on the anterior border of the upper lobe is embedded a nodule 10x5 mm. On section this is seen to caseous material surrounded by a fibrous capsule." Examination of the head: "The scalp is normal. The skull is thin and the inner surface is irregular. The thinner areas are somewhat rough and granular to the finger. The dura seemed unusually adherent to the calvarium and is somewhat rough and red on the outer surface. Its inner surface is normally smooth and glistening. The brain itself is large. There are some adhesions. A thickening of the pia-arachnoid adheres the right anterior portion of the pons to the inferior gyrus of the right temporal lobe. This distorts the base somewhat, pulling the pons forward and to the right. There are also adhesions between the anterior border of the cerebellum, the vermis, and the chiasm and stalk of the pituitary. A cyst like area appearing 2-3 cm. in diameter is seen which proves to be the thinned floor of a markedly thinned third ventricle. There is an area that feels somewhat firm in the right parietal region. As the corpus callosum is divided longitudinally and the third ventricle lies open one sees, lying in the posterior part of this ventricle a mass 5x3x3 cm. in diameter. This is attached by a pedicle to the roof of the third ventricle in the region of the velum interpositum and normal position of the pineal body. It lies a little more to the right than to the left and projects somewhat into the right lateral ventricle. The aqueduct of Sylvius is patent, in fact, somewhat dilated. The external surface of the tumor is rough, hemorrhagic and irregular. About the tumor there is some thick yellowish fluid resembling pus. The consistency of the tumor is moderately firm. The cut surface of the tumor is mottled with yellowish gray areas separated by red hemorrhagic tissue. There are strands of fibrous tissue running through the surface. No other lesions found on further sections of the brain. Cause of death, tumor of the brain, probably a pineal body tumor."

The tumor specimen was sent to Dr. Percival Bailey of Chicago, for microscopic study . . . . "further examination has confirmed my opinion that the tumor which you sent me is a teratoid tumor of the pineal body, commonly known as a pinealoma"(8).

BIBLIOGRAPHY

1. Haldeman, Keene O., Tumors of the Pineal Gland. Arch. of Neurol. & Psych. Vol. 18: 724-754. Nov., 1927.

2. Van Wagenen, Wm. P., A Surgical Approach for the Removal of Certain Pineal Tumors. Surg., Gyn., & Obst. Vol. 53: 216-220. Aug., 1931.

3. Globus, J. H., Pinealoma with Supratentorial Extension and Manifestations of Disrupted Temperature Regulation; Clinical Pathological Study of 2 Cases. Libman Anniv. Vol. 2: 491-505, 1932.

4. Harris, W., and H. Carrns, Diagnosis and Treatment of Pineal Tumor with Report of a Case. Lancet, Vol. 1: 3-9. Jan. 2, 1932.

5. Elkington, J. St. C., Calcified Pineal Tumor. Proc. Roy. Soc. Med. Vol. 25: 1533-1534. Aug., 1932.

6. Vincent, C., and Rappoport, Contribution to the Study of Pinealoma; Report of a Case. Rev. of Neurol. Vol. 1: 517-525. April, 1933.

7. Guillain, G., Anatomic and Clinical Study of Pinealoma; Case. Vol. Jubilaire, Marinesco. 281-292, 1933.

8. Bailey, Percival. Personal communication.

RELIEF OF PROSTATIC OBSTRUCTION

Clyde W. Collings, New York (*Journal A. M. A.*, Jan. 13, 1934), emphasizes the facts that prostatic obstruction is relieved through the cystourethroscope or through a suprapubic or perineal incision and that it is of vital importance to the patient that the obstruction of the neck of the bladder be removed—if not, the resultant renal insufficiency will probably cause death. It is his present belief that a patient suffering from benign enlargement will be better off with a prostatectomy than with transurethral surgery, in the hands of many urologic surgeons (especially those who perform only the old transurethral operation). Prostatic bars, obstructing prostatic carcinoma and scars, slight and moderate intraurethral lateral and median lobes are ideally suited for urethroscopic excision by the trained transurethral surgeon. The markedly enlarged prostate, bulging into the rectum and urethra, had best be removed by prostatectomy. The author reports his observations during the past ten years in relieving ward and private patients of obstructions of the neck of the bladder.

PRESENT STATUS OF ETHYLENE

In summing up the reported explosions, injuries and deaths, due to ethylene, Isabella C. Herb, Hubbard Woods, Ill. (*Journal A. M. A.*, Nov. 25, 1933), found twenty explosions, with one injury and five deaths due to ethylene, two deaths due to mixture of nitrous oxide-oxygen and ethylene and thirty-nine explosions with seven injuries and five deaths due to nitrous oxide-oxygen-ether. Nine explosions occurred when the machines had been idle from a few minutes to two or more hours. The machines had been used for ethylene administration in two instances and for nitrous oxide-oxygen-ether in seven of these explosions. From the foregoing it is evident that nitrous oxide-oxygen-ether forms as highly an explosive mixture as does ethylene, and precautions against this danger are fully as urgent as is required with ethylene-oxygen. Some of the injuries that occurred both with ethylene and with nitrous oxide-oxygen-ether were due to the ignition of the ether in the glass ether chamber of the gas apparatus. The breaking of this chamber scattered the glass and ether about the room, causing fires and burns. Two deaths were recorded due to impure ethylene (carbon monoxide), two in the hands of "inexperienced administrators," and one due to "vasodilatation." The author believes that the death due to vasodiltation should be attributed to operative conditions, such as hemorrhage, as ethylene does not produce or contribute to shock. If it destroys life, it does so through insufficient administration of oxygen, which would be asphyxia.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

To the Honorable House of Delegates of the Nebraska State Medical Association:

Though there has not been a meeting of the State Legislature this year your Committee on Public Policy and Legislation has had numerous meetings and much to consider, as they were appointed by the President at the meeting of the Councilors in January as the liaison committee between the State Director of Emergency Relief and the profession. After much discussion at the Councilors' meeting it was voted that any county society desiring to accept the form and plan of relief as given in FERA No. 7 should have the privilege of so accepting. On May 15, 14 out of the 93 counties were privileged to use FERA No. 7.

We think the committee felt and we are sure that we felt that there were some provisions in No. 7 which had been made for mileage which were unsatisfactory and needed change. At a meeting with Mr. Haynes and Mr. Biart your committee took this matter up with the result that at present FERA No. 7 allows a 12 cent a mile mileage each way outside of cities and towns and 50% of the average fee charged to private patients.

The basis of fees is to be 50% of the usual fees for home and office visits in the counties where the work is done, this fee being secured by correspondence with the county medical society as to the usual fees charged. Drugs shall be included in the fee agreed upon in counties where it is usual for the physician to furnish medicines. In other places the relief worker is authorized to enter into arrangements with drug stores at reduced prices. Total fees for an acute illness shall not be more than a maximum of ten visits in two weeks and chronic illness one visit a week for three months. Hospital operations are not included in the emergency relief. Minor surgery in the home or the doctor's office a maximum of $10.00 to be allowed. Obstetrical care, maximum fee including prenatal and postnatal care shall be determined on the basis of 50% of the usual fee in the county concerned but in no county shall it exceed $15.00. For all authorized visits outside village, town or city, the doctor shall be allowed a mileage of 12 cents each way.

We believe the House of Delegates will be interested in a letter received by the chairman from Mr. Biart, State Director of Federal Emergency Relief, under date of May 15. I quote:

"Dear Dr. Bailey:

"I thought you might be interested in the plans we are making for the future in handling the relief work in Nebraska.

"At this time we are planning to enter into contracts with the various counties under an arrangement whereby in principle all funds available for relief shall be placed in the hands of a qualified director of relief. Under such a plan the director of relief would handle the various phases of the relief problem with the exception of institutional care and Soldiers and Sailors Funds. The relief director would, of course, handle matters of food, fuel, clothing, medical attention and various other factors in the relief field.

"It seems to me that it would be advisable in view of this proposed plan that we have the Nebraska State Medical Association endorse a specific program. I can foresee that the changes contemplated by our new program may give rise to considerable controversy in the matter of handling medical attention.

"It may be advisable to endorse FERA No. 7 or it may be that the association would prefer to present a substitute.

"The third choice is to continue as we have, making such arrangements as we may in the individual counties. This latter procedure to my thinking is entirely wrong. I would much prefer to have the Nebraska Medical Association suggest or endorse a definite program so that when we get going under our new program there will be no hitch and complete cooperation between the FERA and the medical association will exist.

"Yours very truly,
"Randall C. Biart,
"State Director,
"Federal Emergency Relief."

Our contact with Mr. Haynes and Mr. Biart has led us to believe that they desire to cooperate with the State Medical Association and the members of the profession, it always to be remembered that they cannot use more funds than the federal government appropriates for their use and that the emergency relief means care of the indigent, the indigent to mean in the emergency relief those who are on relief and cannot or will not receive medical relief from county or municipal authorities. The object of this emergency relief has been not to relieve counties and municipalities from necessary and legal responsibilities but to recognize the demand for such relief and that some county and municipalities cannot meet their need and that our people must be cared for in case of emergency and suffering.

It is the belief of the committee that this work should be continued in accordance with the request of the government and with what we know will be the heartfelt sympathy of our profession and it shall be the duty of your liaison committee, meaning at this time the Public Policy and Legislative Committee, to be continually on duty protecting the members of our association, having in view at the same time the public need.

We have had repeated meetings with no small sacrifice from the Omaha members, including Dr. Sachs, who have made their regular trips to Lincoln to attend those meetings and we would recommend that this contact be continued by your future Public Policy and Legislative Committee as perhaps the most logical committee upon whom to place responsibility.

At this time we do desire to say that we consider it a distinct tragedy and loss to us and to the community that Mr. Biart should have suffered the automobile injury of which you all know.

Respectfully submitted,
Benj. F. Bailey, Chairman.
E. W. Rowe,
R. W. Fouts.

REPORT OF DELEGATES TO MILWAUKEE MEETING OF THE A. M. A.

The Eighty-fourth Annual Session of the American Medical Association was held at Milwaukee, Wisconsin, June 12 to 16, 1933.

Characterizing the efficient and business-like manner in which he has presided over the deliberations of the House of Delegates for the past twelve years, Speaker Fred C. Warnshuis called the meeting to order promptly at 10 a. m. Following a preliminary report of the Committee on Credentials and the adoption of the minutes of the New Orleans Session, the Speaker's address followed.

He stated that many problems were confronting the medical profession and that, as a rule, they are not amenable to national enactments but are best met by local action.

Dr. E. H. Carey's Presidential address called attention to the fact that during the past year restrictions for the prescribing of medical spirits by physicians had been lifted. He stated that through the efforts of the officers of the American Medical Association and the Medical Legal bureau, a wide spread sentiment had developed in congress that the government had gone far enough in its hospital programs and that during the present administration no more hospitals would be built; that beds occupied by non-service disabled veterans would gradually be replaced by those suffering from tuberculosis and nervous and mental diseases. He also touched upon the Sheppard-Towner Act and the narcotic question. He stated that due to the cooperation of the component county societies and the efficient work of the officers and committees of the association, it has not lost a significant point in policy or legislation in the last five years.

Dr. Dean Lewis, President-elect, in discussing the extensive hospitalization program upon which the government embarked following the World war and from which non-service connected disabilities had recently been excluded, called attention to the fact that attempts would no doubt be made to reestablish the custom. He stated that if such a practice was to continue, the foundation and future of medicine are threatened. Also, that it is much more difficult to rescind legislation than to prevent its passage, and that the medical profession must still make untiring and unceasing effort to prevent the hospitalization of non-service connected disabilities. In connection with hospitals, he stated that the medical profession should take an active interest in hospital planning for the needs of the community; that it is better to have one hospital filled than three partially filled, and therefore, pointed to hospitalization as one of the principal items in the increased cost of medical care. He also advocated a simplification of medical practice which would mean a limitation of specialism and a reduction of specialists.

The Secretary's report showed a slight loss in membership and fellowship on account of resignations due to the unfavorable economic situation.

The financial statements of the Board of Trustees shows the American Medical Association to have assets of almost three and one-half million dollars, and a business for the preceding year of over one and one-half million dollars which was operated at a profit.

No attempt will be made to report the deliberations of the House of Delegates other than to denote the disposition of some of the more important subjects presented.

1. A petition signed by many was presented asking for the creation of a Section of Stomotology in the Scientific Assembly, and much argument was advanced. This was denied.

2. A resolution that the council on Medical Education and Hospitals be authorized to express its approval of such special examining boards as conform to the standards of administration formulated by the council, and the Board of Trustees be urged to use the machinery of the American Medical Association including the publication of its Directory, to the end that members of the medical profession and others who may be concerned may be able to distinguish readily those who have received training in the various branches of medicine from those who are merely self constituted specialists.

A resolution was adopted to the effect that curriculums of medical schools of this country should include some time to be devoted to the training of the student in the basic business procedures necessary to conduct successfully the business of a medical practice.

Another committee reports favorable on the establishing of a chair of medical economics in all Medical Colleges.

A resolution condemning the organization of groups around hospitals or otherwise, as recommended by the Majority Report of Committees on the costs of medical care, was adopted.

A resolution calling for the creation of a committee for the study of birth control was presented and after much lively discussion, was tabled.

A discussion of contract practice resulted in the following dictum from the Judicial Council. Contract practice per se is not unethical. However, certain features or conditions, if present, make a contract unethical, among which are:

1. Where there is solicitation of patients, directly or indirectly.

2. Where there is underbidding to secure the contract.

3. When the compensation is inadequate to assure good medical service.

4. When there is interference with reasonable competition in a community.

5. When free choice of physicians is prevented.

6. When the conditions of his employment make it impossible to render adequate service to his patients.

7. When the contract, because of any of its provisions or practical results, is contrary to sound public policy.

This report has only touched upon the more important subjects upon which definite action was taken. The usual Scientific Program was presented, and the Scientific Exhibit was said to have surpassed that of any previous meeting. The scientific exhibit alone is worth the time and expense of attendance, and physicians should be urged to attend these annual meetings.

Dr. Walter L. Bierring of Des Moines, Iowa, was elected president-elect, and Cleveland, Ohio, was chosen as the meeting place for 1934.

Respectfully submitted,
R. W. Fouts,
B. F. Bailey,
Delegates.

REPORT OF NEBRASKA DELEGATE TO A. M. A. MEETING OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, FOR 1934

To the Honorable House of Delegates of the Nebraska State Medical Association, greetings.

The A. M. A. Congress of the Council on Medical Education and Hospitals convened in February, 1934, at Chicago. Your delegate attended, as directed.

I wish it might be possible for each and every member of this House of Delegates to attend one or more of these meetings. The work there done is so different from most medical meetings which we attend. No scientific work is attempted. The task is one of planning the future, weighing the present, and profiting by the past. It is most enlightening and most inspiring to listen in on these discussions of tomorrow and today.

As your delegate for years, I have long since learned that what I can add to this medical congress of first magnitude is infinitestimally small. I have therefore very often searched my own judgment for the best method of serving the association which sends me as a delegate. To the best of my knowledge and ability, I have served as a go-between man, by returning promptly and in different ways, the outstanding transactions and conclusions of the Congress. Again, today, it is my desire to give in the brief time which you can allot to this item, a few of the outstanding transactions of the congress, selecting naturally those which I believe concern Nebraska most.

The congress is opened each year by a sort of key-note address, always given by the chairman of the council. The chairman is always a very outstanding man. In the past such men as the late Frank Billings, and more recently Dr. A. D. Bevan have served. At present Dr. Ray Lyman Wilbur, of Leland Stanford, is presiding. The chairman's address always has a historical foundation, which briefly abstracts the purpose for which the council was organized, and gives enough of the outstanding accomplishment during its existence, to establish a proper foundation for the present procedure. Dr. Wilbur does this especially well, and when he has finished one can read into the program about what the issues for discussion will be.

In the review of the past, you will all remember that the chief purpose for the organization of this council was to improve medical education in the United States. You will remember how we have decreased from one hundred sixty-six medical schools to about seventy at the present time. How we have reduced the enrollment from thirty-five thousand medical students to thirteen thousand, and yet many thorough students of the medical education problems of this country, believe this number to be too great. Please note also that last year sixteen thousand boys applied for matriculation in the freshman years, and only sixty-two hundred were admitted. This overcrowded market, as it were, has forced many thousand students from the United States to matriculate in colleges in Europe, during the past few years. Accordingly, about two thousand American students who graduated in Europe, returned last year and applied for license to practice in the U. S. A. You will see how this situation leads immediately to a very acute problem in both medical education and licensure.

This is a very unusual situation. Ordinarily, public opinion in the United States would not permit such a condition. People are so accustomed to having what they want, that this amount of resistance in giving medical education to those who wish it is somewhat extraordinary. However, to the understanding student of the situation it seems fortunate for the doctor and for the people. Super-saturation in a medical field leads quickly to destructive temptations; illegal operations, practice buying, quackery, etc. Any thinking man or woman can see how this would promptly lower medical efficiency in practice. Believing then that already too many doctors practice in the United States, it is but fair that medical students and prospective matriculents would be so told. This can be done through lay avenues and through our universities and colleges. Prospects should know that the medical practice is no longer a highly profitable profession. Many of us here assembled have already returned to the bonnie brier bush practices of trading service for pork, chickens, and butter. To further keep the number of matriculents down they should be made to understand that the graduate enters practice in his 28th year; that the licensing boards are becoming more strict. Specialists will probably soon be licensed, and indeed every practitioner may at not a very remote day be required to renew his license by examination rather than registration. These prospective doctors should be told of the high mortality in the profession. Of the great amount of charity work, much of which is a thankless task. In such ways, it is hoped that the registration of medical students will be cut down to a point where medical service standards may be kept high. To a point where an assured existence may follow the long years of preparation. To a point where the graduate student may remain interested along with the researcher, because it is upon this field of medical education that the onward march of medical progress so largely depends today. By all of these limitations it is hoped that the proper balance will exist between the supply and the demand, so that an up-to-date 1934 model practitioner may remain on the market. The requirements of such a model doctor are great. He must possess scientific medical ability. He must be a humanitarian, able to meet the sick man as an individual. He must be able to apply his medical ability in the newer phases of psychology and sociology. He must, as a general practitioner, be a coordinator of specialists, to whom he takes his patients, and these specialists in turn must take their place in the chain.

Other activities of this council in the past, have had to do with the establishment of numerous bureaus, such as chemistry and pharmacy, with the standardization of hospitals, looking to the welfare of the patient, the interne, and the training school for nurses, as well as to the resident physician. It has dealt with the researcher and the clinical teaching ability. These and many other past activities all lead up to present problems, more or less demanding.

Dr. Wilbur called our attention to the fact that throughout all of this period, both medical education and medical practice had adapted itself more readily to the scientific changes of the times than it had to the social, economic and legal changes of the same period. Medical schools today, with their many departments, tend to develop tradesmen-like doctors rather than those capable of meeting present day requirements. In spite of the fact that we have kept the number of graduates down, and advanced the age of graduation to twenty-eight years, our scientific teaching has come to be very superior to our teaching of practical application of this same knowledge. I was surprised, and I believe you will be surprised to learn, that the council believes a new national survery of medical schools is required. Dr. Wilbur believes that this will require even more courage to carry it to a successful termination than the one which the council began in 1905. He states that there are thirteen thousand medical students registered in our seventy odd medical colleges, most of which are rated "A" schools; but that a wider gap exists between the strong A schools and the weak A, than existed in 1905 between the best and poorest medical schools.

Features emphasized as requiring this new survey in medical education are as follows:

There must be better supervision for graduate instruction.

Better and more uniform postgraduate instruction must reach the practitioner, even if it must be carried to him.

In the medical colleges our curricula must be still further rid of unimportant teachings, in the development of our general practitioner.

The newer social conceptions of medical practice must come in, with adequate adjustment. These will include such things as preventive medicine, health examinations, pre-natal care, nutrition and growth problems, closer relations between the medical practitioner, the dentist, and the nurse, and a better understanding as well as a greater ability to administer practical psychiatry by all workers in the medical field. There is needed a better understanding of the relationship existing between the hospital and the medical school; between the free clinics and the practitioners in their neighborhood. Non-teaching hospitals deserve attention. In many cases today these hospitals are required to deliver a service, the cost of which often exceeds the revenue for the care of the patient. Somehow, this must be adjusted. There must be a greater spread of this cost. It is entirely unfair to expect the hospital, the doctor, and the nurse, to carry this burden which in all justice belongs not to the select few but to the entire community. I believe this furnishes an excellent illustration of the big gap existing today between the amount of scientific knowledge given a medical student and the amount of ability given him to apply this same scientific knowledge. You and I are those students out in practice. We have taught our patients, and hence the community, to expect highly efficient scientific service in our hospitals, and at the same time we have failed to teach them that the cost should spread beyond our own shoulders and that of the hospital. In a similar way, and for like cause, we are succeeding but poorly today in our application of our scientific knowledge in preventive medicine, health examination, and health education. Men of my age are too far from the student's bench to have received school training in these lines. I still know better how to take a gallbladder out than I do to make a health examination, especially if there is a decided psychological phase in the case. You and I, on the firing line of practice, know far better how to treat the sick man than we do to make the city, the county, the state or the national community at large understand the correctness of a greater spread of cost for this said service.

These, then, are some of the problems which confront the council in a proposed new survey. Your delegate believes Dr. Wilbur is right, when he says it will require more courage to confront these problems than it did in 1905 when this council undertook to reform medical education. It cannot be accomplished in the central office nor by the efforts of a few men. It will require the open-minded cooperation of every state and county medical society. It will require adequate organization on our part, so that a continuous understanding of events and happenings will be before us for judgment. Here again, your state medical committee on medical education recommends the advisability of a full-time secretary management for our state association. Divided as our numerous functions are now, there is so much lost motion. Good part-time men and good committies function too spasmodically, by fits and starts and stops. Every man here knows the truth of this statement. Every one of you have served repeatedly on committees where much good was almost accomplished but because of the lack of an avenue or office for continuous function, your efforts failed. I sincerely request you to refer to your March Bulletin of the A. M. A. and review the second article therein. A nearby mid-western state medical association reports in this article her problems of a similar kind, and their solution.

Nebraska is a small state with less money to spend. We are in a depression and there should be no rocking of the boat. Our several part-time officers are good men and are functioning well as such. A better system. a unification of continuous effort, a managerial central office for all activities of the association is our recommendation. Already some change in the personnel of these part-time men is being discussed. If and when this House of Delegates considers such changes, then it might likewise be the opportune time to consider the change to a full time managing secretary system. The report of these council transactions and of the committee's recommendations are respectfully submitted by your delegate and committee chairman.

—J. Stanley Welch.

INSTALLATION OF THE PRESIDENT OF THE NEBRASKA STATE MEDICAL ASSOCIATION

DR. LUCIEN STARK, (Norfolk): The first thing on the program this afternoon is the installation of the president. In the absence of Dr. Cook, I have been asked to act as presiding officer. Of course, you all know your president. I would like to present Dr. Sachs, retiring president, who will install Dr. Joseph Bixby as the president for the ensuing year. (Applause).

DR. ADOLPH SACHS, (Omaha): Mr. Chairman and Members of the Nebraska State Medical Association:

Before introducing our new president I wish to take this opportunity of thanking this society for the wonderful cooperation that was afforded me this year. All committees have functioned well, they have performed their duties in a most excellent manner. It would be presuming too much to impose on this society's time to thank them all individually but I want them to know that I appreciate it from the bottom of my heart. I also wish to thank the worthy Secretary, Dr. Adams, for his cooperation and untiring efforts, and lastly, I wish to compliment the Journal, the publisher and its worthy editor, on a most successful year.

It now gives me great pleasure to usher in your new president. Dr. Joe Bixby needs no introduction to this society. He has been one of its most loyal supporters and ardent workers. He has done a great deal to build up its high standards and success. He is a great organizer and one of our most popular members. He is not only prominent in medical circles but prominent and loved in his own community. Gentlemen, rise and greet your new president. (Applause, audience rising).

DR. JOSEPH BIXBY, President, (Geneva): Dr. Sachs, I thank you. Members of this organization, I appreciate this honor.

In accepting this charge I am not unmindful of the responsibility. The Nebraska State Medical Association has always been an active and efficient organization. The leadership has always been active, efficient and unselfish. Much has been accomplished, and scientific medicine has been elevated and maintained on a high plane in Nebraska. Now, however, we find organized medicine surrounded by enemies, and scientific medicine discredited by many different interests.

The present call is for a program of reorganization, not of the plan, but of the work to be done. The work to be done must be accomplished by the units and individuals that make up this organization. The membership must, not only, be maintained, but it must be increased; every worthy physician in the state of Nebraska should become a member of this organization; and that should be our goal for 1934—that is our goal. There should be no passive membership; every member should be active. The situation calls for men—medical men, whom we really have in Nebraska, to come to the aid of organized medicine and their profession in Nebraska.

A campaign of education is necessary, and this must come, not alone from the shouting from the housetops, but from the individuals of the profession and this organization, in unifying and passifying themselves by cooperation, and in teaching the gospel of scientific medicine at the fireside of their clientele.

Therefore, I would ask for the cooperation of all of the medical men of the state to help in our endeavor to maintain the high standard of medicine, both, as to organization and high scientific standard. (Applause).

ANNUAL LEGISLATIVE PROCEEDINGS, NEBRASKA STATE MEDICAL ASSOCIATION

HOUSE OF DELEGATES
FIRST SESSION

Cornhusker Hotel, Lincoln, Nebr., May 22, 1934—12:30 P. M.

The House of Delegates was called to order by the President, Dr. Adolph Sachs.

A motion was made that inasmuch as the minutes of the 1933 meeting had been published in the Journal that the reading of them be dispensed with and that they be approved and adopted as published in the Nebraska State Medical Journal. Seconded and carried.

Roll call by Secretary Adams showed fifty-three members present. Then followed the regular order of business.

A motion was made that Dr. H. W. Benson be seated as a delegate from Burt County in the absence of the regular delegate. Seconded and carried.

A motion was made that Dr. Lucien Stark be elected as President pro tem. Seconded and carried.

The report of the Council was called for. Dr. Overgaard stated that inasmuch as the report of the Council at its January meeting had been published in the Journal and there was nothing further to add that the reading of the report of the Council be dispensed with.

A motion was made that the House of Delegates adopt the minutes of the Council as published in the Journal. Seconded and carried.

The report of the Committee on Public Policy and Legislation was called for. This report was read by Dr. Bailey. A motion was made that this report be received and referred to the Council. Seconded and carried.

The report of the Committee on Journal and Publication was called for. Dr. Long stated that he had no further additions to make to the report which was given in January and asked that this report be accepted. A motion was made that the report of the Journal Committee be accepted as given before the Council in January. Seconded and carried.

The report of the Campaign Committee was called for. Dr. Hohlen stated that his committee had nothing further to add to the report which was given in January at the Councilor meeting.

The report of the Insurance Committee was called for. Dr. Selby stated that inasmuch as the report of the Insurance Committee was published in the Journal and that he had nothing further to add that this report be accepted as published. A motion was made that this report be accepted as printed in the Journal. Seconded and carried.

The report of the Council on Medical Education was called for. This report in connection with the Committee on Medical Education was read by Dr. Welch. A motion was made that this report be received and referred to the Council. Seconded and carried.

The report of the Medical Legal Advisory Committee was called for. Dr. Fouts stated that he had nothing further to add to the report which was given before the Council in January.

The report of the Program Committee was called for. Secretary Adams stated that inasmuch as both the Program Committee's and the Secretary's report had been published in the Journal, he saw no necessity of reading them again. A motion was made that the report of the Program Committee and of the Secretary be accepted as printed in the Journal. Seconded and carried.

The report of the Public Activities Committee was called for. The chairman of the Committee was not present.

The report of the Medical Student Loan Fund Committee was called for. Dr. Overgaard stated that the Committee had nothing further to add to the report given before the Council at the January meeting.

The report of the Delegate to the American Medical Association was called for. This report was read by Dr. Fouts. A motion was made that this report be received and referred to the Council. Seconded and carried.

The report of the Committee on the re-districting of the State was called for. An oral report was given by Dr. Nielsen who said: "Inasmuch as we see no good reason for changing the ordinary and usual Councilor Districts at this time, we will recommend that a change therein not be made at this time." A motion was made that this report be received and referred to the Council. Seconded and carried.

Dr. Adolph Sachs, President of the Nebraska State Medical Association, turned the meeting over to Dr. Lucien Stark, president pro tem of the House of Delegates.

Dr. Overgaard read the Necrology report. The members remained standing during the reading. A motion was made that two pages be set aside in the Journal in Memoriam to the members who have passed away during the past year. Seconded and carried.

Dr. Overgaard made a motion that an amendment be made in the by-laws as follows:

Chapter VIII; Section I; Add: A Cancer Committee.

Section 10: A cancer committee shall consist of five members. All matters pertaining to the cancer question shall be referred to this committee. To cooperate with cancer committee of each county society.

This committee shall serve for a term of five years, providing that in the original organization of the committee, one member shall be elected for a term of one year, one for two years, one for three years, one for four years, and one for five years.

A motion was made that this amendment be laid on the table for one day.

Dr. Long made the following motion: "I move that a committee of three to be appointed by the chairman, one from Omaha, one from Lincoln and one from the state at large to study the scheduling of the program of the annual meetings. The committee to report their findings and recommendations to the Council at the annual Councilor meeting in January 1935, the Council then to suggest the method of scheduling the program and entertainment for the 1935 annual meeting." A motion was made that this motion by Dr. Long be referred to the Council. Seconded and carried.

Dr. Bailey made a motion that the House of Delegates send to Mr. Biart, the State Director of Emergency Relief, our regrets and sympathies in time of his illness on account of his automobile accident. Seconded and carried.

Dr. Selby made a motion to the effect that the condolence of this session of the House of Delegates be sent to Dr. A. L. Miller of Kimball and that we express our regrets that he was not able to be present at this session. Seconded and carried.

A motion was made that Dr. Bailey and Dr. Selby be named as a committee of two to convey these two messages. Seconded and carried.

Nominations for the members of the nominating committee were called for. After a recess of five minutes the following nominations were made by the Councilor of each Councilor district:

1st District—Dr. Chas. Moon, Omaha.
2nd District—Dr. Geo. W. Covey, Lincoln.
3rd District—Dr. F. W. Buckley, Beatrice.
4th District—Dr. A. C. Barry, Norfolk.
5th District—Dr. Morris Nielsen, Blair.
6th District—Dr. J. E. Meisenbach, Staplehurst.

7th District—Dr. R. F. Decker, Byron.
8th District—Dr. James W. Gill, Chambers.
9th District—Dr. F. A. Burnham, Arnold.
10th District—Dr. E. F. Leininger, McCook.
11th District—Dr. O. R. Platt, North Platte.
12th District—Dr. W. C. Harvey, Gering.

A motion was made that the House of Delegates adjourn. Seconded and carried.

COUNCILOR MEETING
FIRST SESSION

Hotel Cornhusker, Lincoln, Nebr., May 22, 1934—7:00 P. M.

The meeting was called to order by President of the Council Boyer. Those present were Drs. Overgaard, Lehnhoff, Boyer, Brush, Davis, King, Potter, Douglas, Bryson, Rork, Selby, Cooper, ex-president Sachs, and President Jos. Bixby. Dr. R. B. Adams, Secretary-Treasurer, was also present.

In the absence of Dr. Overgaard in the early part of the meeting Dr. King was appointed secretary pro tem by Dr. Boyer.

The minutes of the Council meeting held in January were read by Dr. King.

Dr. Adams submitted his report in regard to hiring a certified auditor to audit the books of the Nebraska State Medical Association. A motion was made that this report of Secretary Adams be received and placed on file. Seconded and carried.

A motion was made by Dr. Selby that the report of the Committee on Public Policy and Legislation be accepted and published in the Journal and that the Committee on Public Policy and Legislation be named as a Committee that shall deal with Federal Relief matters relating to the State Association, subject to the approval of the several component County Societies and that we recommend to the House of Delegates that the aforesaid Committee be given the power to act on all matters that come before them relating to Emergency Relief. Seconded by Dr. Potter and carried.

A motion was made by Dr. Rork that the report of the Committee on Medical Education and Hospitals and the report of the Delegate to the Council on Medical Education of the American Medical Association be received and recommend that this report be published in the Journal but at the present time the Council does not recommend any change in the present organization. Seconded by Dr. Bryson and carried.

A motion was made by Dr. Potter that the report of the Delegate to the American Medical Association as given by Dr. Fouts be received and published. Seconded by Dr. Rork and carried.

A motion was made by Dr. Selby that Dr. Long's motion in regard to a committee being appointed to study the scheduling of the program of the annual meetings be accepted by the Council and recommended to the House of Delegates its adoption with the exception of reference to the 1935 meeting. Seconded and carried.

Dr. Douglas made a motion that the Council concur with the recommendation of the Committee on the re-districting of the state and that this report be accepted. Seconded and carried.

A motion was made that the Resolution opposing the exploitation of drugs, remedies, etc., over the radio as submitted by the Chicago Medical Society be read before the House of Delegates with the recommendation that it be adopted and sent to the Federal Radio Commission. Seconded and carried.

A motion was made by Dr. Overgaard that the letter and pamphlets in regard to Uniform State Narcotic Act and State Caustic Poison Act as submitted by Dr. Wm. C. Woodward of the American Medical Association be referred to the Committee on Public Policy and Legislation. Seconded and carried.

A motion was made by Dr. Selby that the Council appoint Dr. Lehnhoff to relate the merits of Dr. Long's book to the House of Delegates. Seconded and carried.

Motion was made that the Council adjourn.

HOUSE OF DELEGATES
SECOND SESSION

Cornhusker Hotel, Lincoln, May 23, 1934—8:00 A. M.

The meeting was called to order by Dr. Lucien Stark, president-pro tem. Roll call by Secretary Adams showed forty members present.

The minutes of the first session were read by Secretary Adams. A motion was made that the minutes be adopted as read. Seconded and carried.

Dr. Stark presented Dr. W. L. Bierring, president-elect of the American Medical Association. Dr. Bierring gave a short address before the House of Delegates.

The minutes of the Councilor meeting were read by Dr. Overgaard, secretary of the Council. A motion was made that the minutes of the Council be received. Seconded and carried.

A motion was made that the House of Delegates adopt the amendment proposed by Dr. Overgaard to read as follows: Chapter VIII; Section I; Add: A concer committee. Section 10: A cancer committee shall consist of five members. All matters pertaining to the cancer question shall be referred to this committee. To cooperate with cancer committee of each county society.

This committee shall serve for a term of five years, providing that in the original organization of the committee, one member shall be elected for a term of one year, one for two years, one for three years, one for four years, and one for five years. This motion was seconded and carried.

A motion was made for the adoption of Dr. Long's motion in regard to a committee to study the scheduling of the program of the annual meetings. Seconded and carried.

The following men were appointed by Dr. Stark to serve as a Committee of three to study the scheduling of the program of the annual meetings: Dr. J. D. McCarthy of Omaha; Dr. R. B. Adams of Lincoln and Dr. C. A. Selby of North Platte.

Dr. Lehnhoff gave a brief resume of Dr. Long's new book.

Dr. Bailey read the communication from Dr. Woodward in regard to A Uniform State Narcotic Act and State Caustic Poison Act. A motion was made by Dr. Bailey that this be referred to the Committee on Public Policy and Legislation with the power to act. Seconded and carried.

Dr. Stark read the following communication from Dr. Hoffman, of the University of Nebraska College of Medicine:

"It is the desire of the Obstetrical Department of the University of Nebraska to offer as a stimulation to better obstetric practice, particularly in the lessening of maternal mortality, a cup to be known as the "Oliver Wendell Holmes Memorial Trophy."

This cup shall be awarded each year at the annual meeting of the Nebraska State Medical Association to the councilor district in whose district there has been the least maternal mortality in the year, adjudged on a percentage basis January 1 to January 1, immediately preceding this meeting. It shall be kept by the secretary of that Councilor district preferably in some public place such as a public library, for a period of one year or until the next annual meeting of the Nebraska State Medical Society. It shall be engraved with the name of the councilor district to which it has been awarded. This trophy must be won three successive years by the same councilor district at which time it shall become the permanent property of that councilor district.

The percentage will be compiled by a committee from the Obstetrical Department of the University of Nebraska from the vital statistics available and the trophy shall be awarded on that basis."

A motion was made by Dr. Bryson that we accept the offer of the Obstetrical Department of the University of Nebraska. Seconded and carried.

A communication from the Chicago Medical Society relative to a resolution opposing the exploitation of drugs, remedies, etc., over the radio. Dr. Selby made a motion that this resolution be adopted as written and forwarded to the Federal Radio Commission as the action of the House of Delegates. Seconded and carried.

A resolution adopted by the Missouri State Medical Association submitted to the Nebraska State Medical Association was read by Dr. Stark. Dr. Buis made a motion that this resolution be tabled. Seconded and carried.

A motion was made that the House of Delegates adjourn.

COUNCILOR MEETING
SECOND SESSION

Cornhusker Hotel, Lincoln, May 23, 1934—9:00 A. M.

The meeting was called to order by President of the Council Boyer. Those present were: Drs. Overgaard, Lehnhoff, Boyer, Davis, King, Potter, Bryson, Rork, Cooper and President Bixby. Dr. Adams was also present.

A motion was made by Dr. Potter that Dr. R. W. Fouts be re-elected chairman of the Medical Legal Advisory Committee. Seconded by Dr. Rork and carried.

A motion was made by Dr. Potter that Dr. O. R. Platt of North Platte be elected as a member of the Medical Legal Advisory Committee to fill in the unexpired term of Dr. C. A. Hull who has retired and moved from the state. Seconded and carried.

The following budget was recommended by the Council for the year 1935:

Journal Fund, per member	$ 1.50
Medical Legal Fund, per member	1.00
Salary Chairman Medical Legal Committee	600.00
Salary of Secretary	600.00
Councilor Expense	360.00
Office Expense of Secretary	800.00
Reporter for Meeting	150.00
Campaign Committee	500.00
President's Expense	100.00
Legislative Committee	100.00
Program Talent	500.00
Delegates to A. M. A. and Council on Medical Education as Submitted	
Medical Student Loan Fund, if available	500.00

A motion was made that this budget as read be recommended to the House of Delegates for the year 1935. Seconded and carried.

A motion was made by Dr. Rork that the January meeting be held in Lincoln at 2:00 p. m. Seconded and carried.

A motion was made that the Council adjourn. Seconded and carried.

HOUSE OF DELEGATES
THIRD SESSION

Cornhusker Hotel, Lincoln, May 24, 1934—8:00 A. M.

The meeting was called to order by President-pro tem Dr. Lucien Stark. Roll call by Secretary Adams showed forty-two members present.

The minutes of the second session of the House of Delegates were read by Secretary Adams. A motion was made that the minutes be approved as read. Seconded and carried.

The minutes of the second session of the Council were read by Secretary Adams. A motion was made by Dr. Bailey and seconded by Dr. Nielsen that these minutes be adopted as read. Seconded and carried.

The report of the committee on nominations was called for. This report was read by Dr. Morris Nielsen as follows:

For President-elect: Dr. C. A. Selby, North Platte.

For Vice Presidents: Dr. A. E. Buchanan, Fremont; Dr. A. A. Conrad, Crete.

For Councilors: Dr. Homer Davis, Genoa, 5th District; Dr. D. D. King, York, 6th District; Dr. H. E. Potter, Fairbury, 7th District; Dr. W. J. Douglas, Atkinson, 8th District.

For Delegate to the A. M. A.: Dr. R. W. Fouts, Omaha.

For Alternate Delegate to the A. M. A.: Dr. J. J. Hompes, Lincoln.

For Delegate to the Council on Medical Education of the A. M. A.: Dr. J. Stanley Welch, Lincoln.

For Member of the Journal and Publication Committee: Dr. A. F. Tyler, Omaha.

For Member of the Student Loan Fund Committee: Dr. F. A. Long, Madison.

For Member of the Public Activities Committee: Dr. J. Stanley Welch, Lincoln.

For Members of the Cancer Committee: Dr. James F. Kelley, Omaha; Dr. George Covey, Lincoln; Dr. W. C. Harvey, Gering; Dr. John Buis, Pender; Dr. J. M. Willis, McCook.

A motion was made by Dr. Howard that the report of the nominating committee be accepted. Seconded and carried.

The House then proceeded to the election of officers.

Additional nominations for president-elect were in order. As no additional names were submitted by the House, nominations for president-elect were closed. A motion was made that the rules be suspended and that the secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. C. A. Selby for president-elect. Seconded and carried.

Dr. Stark appointed Dr. F. A. Burnham of Arnold and Dr. O. R. Platt of North Platte as a committee of two to bring Dr. Selby, president-elect, before the House of Delegates.

A motion was made by Dr. Nielsen that inasmuch as there was only one candidate for each office that the rules be suspended and the secretary be asked to cast the unanimous ballot of the House of Delegates for the men named by the nominating committee for offices in the Nebraska State Medical Association. Seconded and carried.

The selection for the place of the next meeting was then in order.

Dr. Stark read an invitation to hold the 1935 meeting in Omaha received from the Omaha Chamber of Commerce.

Dr. Potter made a motion that the 1935 meeting be held in Omaha. Seconded and carried.

Dr. C. A. Selby was at this time brought in the room and introduced to the House of Delegates by Dr. Stark. Dr. Selby gave a short talk in appreciation of the honor given him.

Drs. Burnham and Platt were asked by the chair to introduce Dr. Selby as the president-elect before the general sessions.

A motion was made by Dr. Nielsen that the House of Delegates extend to the Lancaster Medical Society a vote of sincere thanks for their splendid entertainment and also a vote of thanks to the Cornhusker Hotel for their courteous treatment of the Nebraska State Medical Association. Unanimously carried.

A motion was made to adjourn. Seconded and carried.

ROLL CALL—HOUSE OF DELEGATES

Adams—J. P. Feese	p	a	p
D. W. Kingsley	a	a	a
Boone—	a	a	a
Box Butte—	a	a	a

Buffalo—L. T. Sidwell	a	a	a
J. W. Laughlin	a	a	a
Burt—Isiah Lukens	p	p	p
H. W. Benson	p	a	a
Butler—	a	a	a
Cass—W. H. Walters	a	a	a
O. E. Liston	a	a	a
Cedar-Dixon-Dakota-Thurston-Wayne—			
John Buis	p	p	p
Chase-Dundy-Red Willow-Furnas-Hayes-Hitchcock-Frontier—			
F. M. Karrer	a	a	a
J. E. Prest	a	a	a
E. F. Leininger	p	a	a
R. R. Reed	a	a	a
J. F. Premer	a	a	a
Sophia Warner	a	a	a
W. C. Miller	p	a	p
B. I. Mills	a	a	a
D. L. Morse	a	a	a
Geo. Hoffmeister	p	a	a
C. R. Carlson	a	a	a
Cheyenne-Kimball—R. E. Roche	a	a	a
A. R. Everett	a	a	a
Clay—H. H. Seely	a	p	p
Colfax—W. F. Novak	a	a	a
F. G. Vosika	a	a	a
Custer—F. A. Burnham	p	p	p
Dawson—E. C. Stevenson	a	a	a
Mary Fochtman	a	p	p
Dodge—A. E. Buchanan	a	a	a
D. M. Bloch	a	a	a
Fillmore—V. V. Smrha	p	a	a
W. S. Musfelt	a	a	a
Franklin—H. C. Smith	p	p	a
W. E. Packwood	a	a	a
Furnas—	a	a	a
Gage—F. W. Buckley	p	p	a
J. R. Moritz	a	a	a
Hall—Frank Ryder	p	a	p
E. A. Watson	a	a	a
Hamilton—J. M. Woodard	p	a	a
Harlan—R. H. Kerr	a	a	a
L. K. Pohl	a	a	a
Holt-Northwest Nebraska—J. W. Gill	p	a	p
Howard—D. B. Wengert	a	a	a
M. O. Arnold	a	a	a
Jefferson—	a	a	a
Johnson—	a	a	a
Lancaster—J. E. M. Thomson	p	p	a
B. F. Williams	a	a	a
Geo. W. Covey	p	p	p
J. J. Hompes	a	a	a
H. E. Flansburg	p	p	p
A. D. Munger	a	a	a
Lincoln—O. R. Platt	p	p	p
Madison-Stanton-Pierce—A. C. Barry	p	a	p
H. R. Palmateer	a	a	a
Antelope-Knox-Cuming—John D. Reid	a	p	p
H. S. Tennant	a	a	a
E. E. Curtis	a	a	a
U. S. Harrison	a	a	a
John H. C lvert	a	a	a
A. E. Mailliard	a	a	a
W. E. Wright	a	p	a
R. E. Johnson	a	a	a
H. W. Francis	p	p	p
C. A. Hoefer	a	a	a
Merrick—	a	a	a
Nance—J. A. Cleary	p	a	a
R. A. Newton	a	a	a
Nemaha—	a	a	a
Northwest Nebraska—	a	a	a
Omaha-Douglas—J. F. Langdon	a	a	a
R. Rix	a	a	a
Chas. Moon	p	p	p
Frank Murphy	a	a	a
E. L. MacQuiddy	p	a	p
H. H. Davis	a	a	a
Ernest Kelley	p	a	a
J. A. Borghoff	a	a	a
L. E. Moon	a	a	a
Harry Sullivan	a	a	a
M. C. Howard	p	a	p
E. S. Maloney	a	a	a
Otoe—D. D. Stonecypher	a	a	p
Pawnee—A. B. Anderson, Jr.	a	p	a
W. R. Boyer	p	p	p
Phelps—K. P. Palmer	a	p	p
P. A. Sundbury	a	a	a
Platte—E. E. Koebbe	a	p	a
F. H. Morrow	a	a	a
Polk—A. A. Blum	a	a	a
H. S. Eklund	a	a	a
Richardson—G. W. Egermayer	a	a	a
Wm. Shepherd	a	a	a
Saline—Robert C. Panter	p	p	p
F. J. Stejskal	a	a	a
Saunders—	a	a	a
Scotts Bluff—W. C. Harvey	p	a	p
G. W. Puglsey	a	a	a
Seward—J. E. Meisenbach	p	p	p
H. J. Wortman	a	a	a
Thayer—Rudolph F. Decker	p	p	p
F. A. Mountford	a	a	a
Valley—	a	a	a
Washington—A. J. Cameron	p	a	p
Webster—E. A. Creighton	a	a	a
S. H. O'Neill	a	p	a
York—H. O. Bell	p	a	a
R. E. Harry	a	a	a

COUNCILORS

A. P. Overgaard	p	p	a
H. J. Lehnhoff	p	p	p
W. R. Boyer	p	p	p
E. L. Brush	p	a	p
Homer Davis	p	p	p
D. D. King	p	p	p
H. E. Potter	p	p	p
W. J. Douglas	p	a	p
R. D. Bryson	p	p	p
L. W. Rork	p	p	a
C. A. Selby	p	p	a
A. L. Cooper	p	p	p
President—1st meeting—Adolph Sachs	p		
President-elect—1st meeting—Joseph Bixby	p		
President—Joseph Bixby		p	p
Vice Presidents—Geo. L. Pinney	a	a	a
William Shepherd	a	a	a
Secretary-Treasurer—R. B. Adams	p	p	p

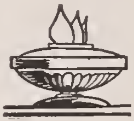
EX-PRESIDENTS

J. E. Summers	a	a	a
W. O. Bridges	a	a	a
F. A. Long	p	p	p
P. H. Salter	a	a	a
J. P. Lord	a	a	a
I. N. Pickett	a	a	a
E. W. Rowe	p	a	a
W. F. Milroy	a	a	a
C. L. Mullins	a	a	a
H. W. Orr	p	p	a
M. S. Moore	a	a	a
B. F. Bailey	p	p	p
Morris Nielson	p	p	p
Palmer Findley	a	a	a
H. J. Lehnhoff	p	p	p
H. E. Potter	p	p	p
B. R. McGrath	a	a	a
F. S. Owen	a	a	a
K. S. J. Hohlen	p	p	p
Lucien Stark	p	p	p
A. E. Cook	a	a	a
Adolph Sachs—after 1st meeting		a	p

In Memoriam

Be with me beauty for the fire is dying,
My dog and I are old, too old for roving.
Man, whose young passion sets the spindrift flying
Is soon too lame to march, too cold for loving,
I take my book, I gather to the fire and turn old yellowed leaves. Minute by minute
The clock ticks to my heart. A withered wire moves a lost chord of music in the spinet.
I cannot sail your seas, I cannot wander your highland, nor your cornland, nor your valleys
Ever again; nor join the battle yonder where the young Knight the broken squadron rallies—
Only be quiet, while the mind remembers the beauty of fire, from the beauty of embers.
To live in hearts we leave behind is not to die.

—"Masefield's Sonnets"



Albert R. Mitchell

President of the Nebraska State Medical Association, 1900

Died May 26, 1933

In Memoriam

And they are gone. The shadow watching men
At last has claimed its forfeit, And there rose
A cry of anguish mounting to the the stars
Among the many who had found them fair.

Sleep on, O friends, until the waking day;
And ever we who loved their presence here
Will keep for them, through changes manifold,
A tender memory, growing with the years.

Geo. H. Bentz, June 3rd, 1933
Raymond Rice, July 15th, 1933
Francis H. Geer, July 20th, 1933
Thomas M. Gairdner, July 27th, 1933
Fredrick W. Kruse, August 6th, 1933
Vernon V. Talcott, August 11th, 1933
Francis A. Bryant, August 14th, 1933
Arthur B. Adams, August 16th, 1933
Wm. T. McCrann, October 14th, 1933
Chas. E. Sayre, November 18th, 1933
Chas. W. Hendrickson, November 21st, 1933
Oscar H. Hahn, November 23rd, 1933
Verne V. Vance, November 25th, 1933
Albon E. Bartoo, November 29th, 1933
William Berry, December 3rd, 1933
Peter L. Gillespie, December 17th, 1933
Nathan H. Blakeley, December 29th, 1933
LeRoy Crummer, January 2nd, 1934
Arthur D. Dunn, January 8th, 1934
Oscar L. Wilson, January 21st, 1934
Albert E. Hoff, January 27th, 1934
Chas. F. Clark, February 10th, 1934
Dennis Neville, March 5th, 1934
Harry M. Hepperlen, Sr., May 4th, 1934
C. C. Telleson, May 4th, 1934
A. L. Matthews, March
R. C. Talbot, May 13, 1934

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor............Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman............Madison
A. F. Tyler............Omaha
B. F. Bailey............Lincoln
R. B. Adams, Ex Officio............Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. 19 July No. 7

NEWLY ELECTED OFFICERS

The full list of officers elected at the recent annual meeting of the Nebraska State Medical Association at Lincoln, follows:

Dr. Claude A. Selby, North Platte, president-elect.

Dr. A. E. Buchanan, Fremont, and Dr. A. A. Conrad, Crete, were elected vice presidents and Dr. Homer Davis, Genoa; Dr. D. D. King, York; Dr. H. E. Potter, Fairbury, and Dr. W. J. Douglas, Atkinson, board of councilors.

Dr. R. W. Fouts, Omaha, was named delegate to the American Medical association and Dr. J. J. Hompes, Lincoln alternate. Dr. J. Stanley Welch, Lincoln, was named delegate to the council on medical education of the A. M. A.

Dr. A. F. Tyler, Omaha, was elected to publications committee; Dr. F. A. Long, Madison, student loan committee, and Dr. Welch a member public activities committee.

A new state cancer committee consists of Dr. James K. Kelly, Omaha; Dr. George W. Covey, Lincoln; Dr. W. C. Harvey, Scottsbluff; Dr. John Buis, Pender, and Dr. J. W. Willis, McCook.

THE SIXTY-SIXTH ANNUAL MEETING

The annual meeting of the Nebraska State Medical Association held at Lincoln, May 22-24, again demonstrated that interest in organized medicine does not necessarily suffer from economic depressions.

The paid membership at the time of meeting was larger by thirty-five than the total for 1933 and the registered attendance totalled 443, a near all-time record for attendance.

The program was a happy combination of good things and the novel idea of a pediatric program for the final afternoon justified itself by the attendance and interest manifested.

The guests of honor, each one of whom brought an outstanding message, were the following:

Dr. W. A. Fansler, Assistant Professor of Surgery, University of Minnesota, Minneapolis, Minn.

Dr. Edwin P. Sloane, Bloomington, Illinois.

Dr. Kellog Speed, Clinical Professor of Surgery, Rush Medical College, Chicago, Illinois.

Dr. W. L. Bierring, President-elect, American Medical Association, Des Moines, Iowa.

Dr. R. A. Fenton, D. D. S., Chairman, Department of Oral Surgery, University of Iowa, Iowa City, Iowa.

Dr. Thomas G. Orr, Professor of Surgery, University of Kansas, Kansas City, Mo.

Dr. C. J. Barborka, Chicago, Illinois.

A cancer committee was created by the house of delegates.

The entertainment provided was the annual banquet, attended by upward of 250 guests. The presidential address of Dr. Joseph Bixby, delivered on this occasion, was well received and was accounted a masterpiece of medical economic philosophy. Other entertainment incidental to annual meeting week was a dinner given by the Nebraska Tuberculosis Association at the University club, Tuesday evening, May 22. Dr. Chester A. Stewart, Minneapolis, gave the address.

The Woman's Auxiliary had its several functions during the days of the annual meeting. The eye, ear, nose and throat men gave a banquet the evening preceding the opening of the annual meeting. Altogether annual meeting week was a worth-while event in medical circles. The Nebraska Association of Medical Women gave a separate program May 22.

Dr. Claude Selby, North Platte, was elected president-elect.

The local committee of arrangements functioned admirably and with the cooperation of the management of the Cornhusker hotel, nothing could have gone smoother.

A NEW BY-LAW—A CANCER COMMITTEE

In Chapter VIII, Section I, Add: A Cancer Committee, Section X. A cancer committee which shall consist of five members. All matters pertaining to the cancer question shall be referred to this committee. The committee shall cooperate with the cancer committee of each county society.

This committee shall serve for a term of five years, provided that in the original organization one member shall be elected for a term of one year, one for two years, one for three years, one for four years and one for five years.

THE DECLINING BIRTH RATE

"The social life of tomorrow is already determined by the children now living: literally they are the future society." (Frank). "In 1930 for the first time, there were fewer children under five years of age than in the preceeding census and still more astonishing, fewer children under five years than between five and ten." (Litzenberg). There has been a gradual decline in the birth rate for two generations. Accurate records date back to 1915 when the birth rate was 23.7 per thousand population. In 1933 it was near 16.6 per thousand population which is the estimated rate required to maintain a population stability.

The present period of economic stress appears to bear no relation to this decline, for throughout the period for which figures are available, the decline has been constant and predictable. It is parallel to and nearly identical with the curve of birth rates for the nations of northern and western Europe. In common with other agricultural states the birth rate for our own state is slightly higher, i. e., 18.1 in 1932, than the national average and considerably higher than in urban communities. But even in agricultural states this decline is constant. "In the country the child is an economic asset, in the city an economic liability." Formerly among the laboring class and more particularly among the farmers, children were an old age insurance. Now with higher educational requirements, limitation of child labor, mechanization of farming, and migration to the cities, the economic value of children to their parents is lost, and the expense of their education has made them a liability.

As an associated underlying and perhaps fundamental influence, we find that with higher educational requirements and higher standards of living, late marriage is the rule among the middle class population. It is among this group representing the backbone of the country, and most desirable from the standpoint of parenthood that the greatest restrictions in the size of the family occurs. The really wealthy represent too small a part of the population to affect materially the birth rate. On the other hand it is left to those with less favorable hereditary, social, and economic background, to maintain so far as is done the birth rate at a point near that required for population stability. If such trends were to continue we would in another generation be a nation characterized by a numerical preponderance of middle aged and old adults and, less promising youth. The problem created is striking at the very root of our social and economic existence.

Fortunately through improved sanitation, hygiene, and pediatric care, better care during pregnancy, labor and the postpartum period, and greater attention to the new-born a certain saving in potential citizens has been affected. In spite of this saving in new-born and infants the increase in births over deaths has fallen to two-thirds of what it was in 1915 (12.05 to 8.09/1000 population). In spite of this same salvage the most dangerous day in a child's life is still its birthday, and its most dangerous month the first month. A certain number of still born and new-born deaths are unpreventable, but it is conservatively estimated that another 25% or more of these deaths could be prevented, if the benefits of our present knowledge were utilized. Yet there is a limit to even these savings, and, which at best, would only partly compensate for the present decline in birth rate.

There are those who believe, and upon good grounds "that induced abortions may have quite as much and probably more to do with the fall in birth rate than does contraception." (Litzenberg.) The incidence has been conservatively estimated from 20 abortions per hundred births (Harvey, 1926, in a rural community) to more than 40 per hundred births (Taussig). Certainly if one-fourth of these could be prevented the gain when added to other possible savings in new-borns, would much more than compensate for the fall in birth rate. The sad corollary is that for the most part this loss in potential citizens occurs among the class best suited to parenthood and that further, a considerable number will be rendered incapable of conception in the future. The challenge in regard to this problem is to society itself.

Litzenberg writes, "The public welfare demands that the known, thoroughly demonstrated life saving measures be employed throughout the country to the end that many infant lives may be saved, not only as babies for the home but also as future citizens whose social importance is emphasized by their rapidly decreasing numbers."

—H. E. Harvey, Lincoln.

AN IMPORTANT MEDICO-LEGAL DECISION BY THE NEBRASKA SUPREME COURT

C. Edward Sayre,)
Appellant)
v.) No. 28830.
County of Madison,)
Appellee.)

A physician, not hired by the county, may not recover from the county for services rendered to a poor person in an emergency where there exists a duly appointed county physician to care for the poor, the latter physician being able, willing, and ready to serve, but not consulted.

Heard before Rose and Paine, JJ., and Lightner, Thomsen and Redick, District Judges.

Thomsen, District Judge.

The question presented on this appeal is whether a physician, not hired by the county, may recover from the county for services rendered to a poor person in an emergency where there exists a duly appointed county physician to care for the poor, the latter physician being able, willing, and ready to serve, but not consulted.

The services were rendered April, 1932, to one, probably not classified as a pauper, but coming within the definition of those entitled to such relief under section 68-114, Comp. St. 1929. The plaintiff's associate conferred with one of the county commissioners, who consented to the diseased person being taken to the Lutheran Hospital at Norfolk, but refused any allowance for surgical service to the applying physician. The county paid the hospital charges. The case was one of great emergency in which, through a timely operation the poor person's life was saved. According to the testimony, the result may have been fatal had there been any delay.

The essential facts are not in dispute. The county physician's office "was within a stone's throw of the Lutheran Hospital." The county physician had not performed an appendix operation for 12 or 15 years and surgery was not his specialty, but he claimed to be capable of doing such work, and said that he would have performed the operation if he had been called upon, and would have done so without further charge than the fee that the county was paying him. Under the foregoing conditions there can be no recovery. It was the duty of the county to furnish medical aid under the circumstances, but not necessarily to furnish the poor person's choice of medical aid. Statutes of the kind under consideration here should be given a very liberal construction, and county boards should be generous in supplying the aid which the legislators intended for destitute persons; but when the county provides a physician for that purpose, able and competent to give satisfactory service, and such physician is ready and willing to render such service upon call, then the duty of the county is fulfilled. Under those conditions it is not permissible for the sick one to choose who shall render the service to him. It is stated in Hamilton County v. Meyers, 23 Neb. 718, at p. 722: "While in this case public morals might suggest the payment of the claim presented, yet it would open a door which would be liable to great abuse by the unscrupulous." If the county physician had refused or been unable to attend or had been incompetent to take care of the case, a different question might have been presented.

The cause was submtited in district court to a jury. The latter found for defendant. A number of questions are raised with respect to the court's giving certain instructions to the jury, but it is unnecessary to discuss these in view of the fact that under the law and the facts no recovery at all could be had.

The judgment of the district court is
AFFIRMED.

Associate Justice Paine gave a dissenting opinion which, in part, follows:

Here was an emergency surgical case, which the law required the county board to take care of. The physician called testified he did not know that the county had a county physician until after the operation. He called in a skilled surgeon, and together they saved the life of the patient.

I frankly admit that there are strong precedents which support the main opinion, yet, with a little search, I have found opinions, largely from western states, which strongly support this dissent, and take a stand supported by every humanitarian principle.

"A physician employed by township trustees to render aid to a pauper may recover therefor when the regular county physician is under no obligation to attend the township poor, or is incompetent, or inconvenient of access." 48 C. J. 540.

"Mervia Hahn, a poor, friendless, moneyless person, was dangerously ill in the midst of a civilized community. What was to be done? Should the poor creature die for lack of professional succor because it was the wrong factotum, the township trustee, rather than the mayor of Onaga, who engaged the plaintiff's professional services to relieve her distress? This court has held that the important matter in such cases is to save life and succor the distressed." Leinbach v. Pottawatomie County, 116 Kan. 347.

"The general rule is that, in case of emergency attendance of a pauper, a physician may hold the county liable although he acted without the request or the consent of the persons designated by statute as overseers of the poor, where such poor person requires the immediate attention of a physician, who renders services to relieve the necessity; * * * the physician and surgeon may recover reasonable compensation from the county within the limit of the fund provided by law for such purpose." Board of Commissioners v. Enid Springs Sanitarium & Hospital, 116 Okla. 249.

"If such services were rendered without authority from any county official authorized by law to bind the county, it must, of course, appear that an emergency existed which rendered it impossible to await such authorization, and that the situation was promptly reported to the board of county commissioners or to the proper county official, of the proper county." Sweet Clinic v. Lewis County, 154 Wash. 416. See, also, Mandan Deaconess Hospital v. Sioux County, 248 N. W. (N. Dak.) 924; Lacy v. Kossuth County, 106 Ia. 16; 75 N. W. 689; Newcomer v. Jefferson Township, 181 Ind. 1, Ann. Cas. 1916D, 181; Bartlett v. Dahlsten, 104 Neb. 738; Board of County Commissioners v. Cole, 9 Ind. App. 474.

"A physician, summoned to attend a pauper, called in another to assist in the performance of a surgical operation, but no claim was made against the county except by the former. Held, that, such employment not being a delegation of authority, the county was liable." Taylor v. Woodbury County, 106 Ia. 602, 76 N. W. 824.

"Before a cause of action accrues in favor of a county or its county board * * * against a relative who fails to furnish support to an indigent relative entitled to support under the provisions of said section, it is necessary that such delinquent relative be first directed by order of the county board to furnish support and refuse to do so." Howard County v. Enevoldsen, 118 Neb. 222.

In Caton & Starr v. Osborne County, 110 Kan. 711, the text states that, if the child of an indigent person was seized with appendicitis, or a mastoid attack, which was likely to end in death if an operation was not immediately performed or special medical treatment given, it would be a gross dereliction of duty on the part of the overseer if he did not promptly provide for such an emergency and furnish proper care and relief. The syllabus in this case holds as follows:

"Notwithstanding the provisions made for surgical operations and hospital treatment of the children of indigent persons afflicted with certain deformities and maladies, at the state hospital conducted by the regents of the University, it is still the duty of the overseer of the poor in cases of emergency to promptly provide proper medical or surgical treatment for children of the poor where the lack of emergency relief is likely to result in the loss of life or other serious consequence."

Neslund v. Dawson County, No. 26554, was decided by our Nebraska Supreme Court Commission April 30, 1929, and its finding is only authority in that one case, yet it is quite in point. Neal Bevard, a 13-year-old boy, was struck with a heavy club on the school-grounds in Cozad, and both bones of his right leg broken. The fibula was broken in four places, and the foot had turned black from lack of circulation. The injured boy was the oldest of seven children, and, with the father and mother, lived in a one-room shack with one bed. The county board was in session at the time of the accident, down at Lexington, 18 miles distant, and upon being called on long distance telephone by a Good Samaritan, one of the commissioners, who answered the telephone, refused to do anything, and rudely restored the receiver to its hook. He was again called by long distance, and answered, "You are not going to put any more of those d......d paupers on the county," and again hung up the receiver. Dawson county had no county physician at the time. Thereupon, the boy was taken to a hospital at North Platte, the bones were reset several times, 25 x-ray photographs taken, and the limb finally saved. The county board refused to pay claims of $295 for hospital, x-rays, and surgeon's fees in this case, but Commissioners Thompson, Wilson, and Wolff rightly affirmed the judgment of the district court in ordering full payment made by the county board.

In the case at bar, although the member of the county board for that district was assured by a reputable physician and surgeon of Meadow Grove, who had been called, that it was a very serious case and required an emergency major operation, the county commissioner did not disclose the fact that the county had a county physician. The surgeon in charge did not know that the county had a county physician, who had only recently been employed; and in a case like this, when the life of a citizen is hanging in the balance, should the scales of justice be too heavily influenced by technicalities? The life of an unfortunate human being should not be measured in dollars.

The two questions raised by this case are these: (1) If an unfortunate person, without means, is seized with a serious illness, and only an immediate operation will save life, should the claim of a competent surgeon who acts promptly at the call of distress, and saves the life, be rejected in toto by a county board? (2) It being common knowledge that the methods and technique in major operations are improving constantly, has a poor person in distress no alternative but to submit to a delicate major operation by a county physician who admits that he has not performed such an operation in 12 to 15 years?

THE EFFECT OF COOKING ON VITAMINS IN FOODS

Cooking may destroy the vitamins in foods either by heat or oxidation or they may be dissolved out in the cooking water. The exact extent of these losses, explains the United States Bureau of Home Economics, depends upon the length of time of cooking, upon the presence of air or dissolved oxygen, and upon the solubilities of the vitamins concerned.

Vitamins B, C, and G are readily soluble in water. Vitamin C is easily destroyed by heat and oxidation. Vitamin B is destroyed by long-continued heating, but undergoes little destruction when heated at the boiling point of water for as long as one hour. But vitamin B and vitamin C are more rapidly destroyed in an alkaline medium than in an acid medium.

Vitamin A is only slightly soluble in water and is not readily affected at the ordinary temperatures of boiling and baking. It is destroyed, however, at higher temperatures such as those used in frying. It is also destroyed when heated in the presence of oxygen. Vitamins D, G, and E are fairly stable to heat and are not destroyed at ordinary cooking temperatures.

The value of any cooked food as a source of vitamins essential to the maintenance of good health depends largely on its original value in the natural state. Tomatoes remain a good source of vitamin C even after they have been cooked. This is explained, says the Bureau, by the fact that during the cooking the acidity of the tomatoes protects their vitamin C content to a large extent.

In general, the destruction of vitamins is less when foods are heated at high temperatures for short periods than when they are heated at low temperatures for long periods. There is also less loss when a small quantity of water or no water at all is used.

If any cook water is left the Bureau suggests that it should be used for gravies or soups, unless it is so strongly flavored that this is out of the question. Steaming is one of the preferred methods for cooking since the time required is short and the amount of water used is small.

Mineral salts are not destroyed by heat, but they are dissolved in "pot liquor" from cooked vegetables and in the liquor of canned vegetables. Even the moisture condensing in the bottom of a steamer contains mineral salts in solution. Baking in the skin or in a casserole are cooking methods which best conserve the minerals and vitamins.

—United States Weekly.

EDITORIAL PARAGRAPHS

It is stated that in some parts of China lepers are disposed of by shooting them.

A By-Law providing for a cancer committee of six members was passed at the recent annual meeting.

A new edition of Mercks' Manual of Therapeutics and Materia Medica has been issued and is about to be presented to the profession.

A new method of predicting the sex has been introduced by Max Davis (*N. E. Jour. Med.* Feb. 22, 1934) by the use of testicular extract injected intradermally.

Recent press reports are to the effect that within two months between nine hundred and a thousand cases of infantile paralysis have occurred in Los Angeles.

Quarantining of measles, mumps and chicken pox has been abandoned in many places in the United States. Quarantining for some diseases has for many years been overdone.

The proceedings of the councilors and the house of delegates in this number should be carefully read by all. They contain the gist of all the legislative work accomplished at the annual meeting.

A real human interest by physicians in one of their fellows was manifested recently, when four physician fellow townsmen made a trip to a distant city to be present at the operation on one of their fellows.

The Obstetric Department of the University of Nebraska College of Medicine has created an Oliver Wendell Holmes Trophy. The award is to be made annually to the Councilor District showing the best record in Obstetric mortality.

"Heavy water, the new chemical wonder, will be used shortly in experiments upon the growth of cancer cells as a part of the extensive investigation of the heavy hydrogen twin element being directed by Professor H. S. Taylor of Princeton."

Scientific ingenuity has found a way to measure continuously the tiny amounts of perspiration secreted second by second. This news, befitting the approach of hot weather was announced by Dr. Chester W. Darrow of the Behavior Research Fund, Chicago.—Science Service.

It is now said that tuna (fish) liver oil is superior to cod liver and halibut liver oil in its vitamin content. We apparently are on the eve of great discoveries and it need surprise no one to learn later that the shark will add his contribution to the sum of human welfare.

A complimentary dinner sponsored by Dr. J. E. M. Thomson, Lincoln, attended by 100 physicians was given in honor of Dr. W. B. Carrell, Dallas, Texas, orthopedic surgeon to Baylor University hospital. Dr. Carrell gave an illustrated lecture on "Fracture of the Neck of the Femur."

The medical faculty of Creighton University honored the memory of the late Dr. H. v. W. Schulte at its annual program at the Fontenelle hotel. Dr. F. W. Heagey spoke on "Dr. Schulte —His Interests in Social Agencies;" Dr. E. F. Noonan, "Dr. Schulte as an Anatomist." More than 150 persons attended.

The thirteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held in Philadelphia at the Bellevue Stratford, September 10, 11, 12, 13, 1934. Send for preliminary program. Address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

Reports from the Cleveland sessions of the American Medical Association indicate one of the most successful meetings ever held. All the sections met in various parts of one vast auditorium building. The time is past when an assembly like the American Medical Association annual meetings can be "farmed out" all over a convention city.

General hospitals are opening their doors to tuberculosis cases, increasing facilities are being provided for the care of tuberculous children, and 6,863 new beds for treatment of the disease have been added to the nation's public health armament despite the depression. These are the outstanding facts revealed by a three-year survey of tuberculosis sanatoria throughout the United States just completed by the National Tuberculosis Association. The data have been compiled in the form of a sanatorium directory listing facts about 659 institutions containing a total of 86,917 beds.

In another part of this *Journal* we publish an important medico-legal decision of our supreme court. The decision of the court in no wise modifies or changes previous decisions. The case hinged on one point only and on that point the court's decision is adverse to the physician plaintiff. A dissenting opinion by Judge Paine appeals to our sense of justice.

There are now available for tuberculosis patients in the United States 64 federal institutions containing 11,431 beds; 357 state, county and municipal institutions containing 56,940 beds, 73 private institutions containing 4,344 beds; 165 semi-private institutions containing 14,202 beds. These figures do not include provision made in day camps or in summer preventoria.

The increased deaths from automobile accidents can but be attributed to carelessness and recklessness in the handling and use of modern transportation, which requires Constant Alertness with full recognition of responsibility both as to action and reaction of the driver as well as the mechanical condition of the machine, including especially tires and brakes. The auto, unlike the human body, does not tend to compensate for mechanical or functional defects; hence the necessity of the driver's attention to his job and ability to stop within the clear course ahead, which may be a few feet or a mile. A safe rule—"Anticipate the unexpected."—State Board of Health Bulletin.

Federal Emergency Relief Administration and the Omaha-Douglas County Medical society came to terms of agreement in May and FERA is supposedly now functioning in that county. It is understood that the same is true and on the same terms in Lancaster county. The Omaha agreement is about as follows:

A. FERA client may choose the doctor, but requisition for his services must be signed by the family welfare worker.

B. Fee (to be paid by FERA) $1.50 a call.

C. Acute cases: One requisition limited to two weeks with maximum of 10 calls.

D. Chronic cases: Requisition terminates at end of three months. Maximum number of calls, one per week.

E. Emergency cases: Patient may call doctor direct. He must report to relief worker within 24 hours and receive regular requisition.

It is understood that about fifteen counties in Nebraska are no functioning under FERA medical care for unemployed indigent.

OBITUARY

Carl A. Hedblom, Chicago; reared at Marquette, Nebr., and attended Fremont Normal School and Lincoln Business College; Harvard Medical School, 1911; sometime, professor of surgery, Harvard Medical College of China; returning to this country, he became professor of surgery of the chest, University of Wisconsin Medical College, Madison, Wis.; since 1926, professor of surgery of the chest, University of Illinois College of Medicine; one of the foremost chest surgeons of this country; guest speaker —on "Pulmonary Abscess"—at the 1929 annual meeting, Nebraska State Medical Association; a most likable personage; died suddenly, June 6, at Toronto, Canada, aged about fifty-five years.

Frederick A. Sedlacek, Omaha; native of Bohemia; medical education in the Universities of Prague and Vienna, graduating from University of Illinois, 1897; in practice in Tyndall, S. D., for 11 years locating in Omaha in 1908; medical member Red Cross Mission to Siberia that returned two thousand wounded Bohemian prisoners of war from Siberia to their native land, crossing the United States from west to east; a linguist speaking Bohemian, German, Russian, English; assistant health commissioner Omaha for twelve years; member, Nebraska State Medical Association; died May 30, 1934, aged sixty-seven years. A widow and daughter survive.

George A. Morrison, Bradshaw, Nebr.; Nebraska University College of Medicine, 1905; practicing physician at Bradshaw for 29 years; member, Nebraska State Medical Association; died suddenly May 30, 1934, aged about fifty-seven years.

Roscoe E. Schindel, Omaha, Nebr.; Baltimore Medical College, 1897; well known practitioner of South Omaha for thirty-five years; on staff of Covenant hospital; chief surgeon for Armour packing plant; member, Nebraska State Medical Association; a high type physician; died suddenly while operating his car in the line of duty, June 15, 1934, aged sixty-five years.

John T. Mathews, Omaha, Nebr.; retired; Washington University School of Medicine, St. Louis, 1881; practitioner in Omaha from 1886 until his retirement; died June 18, 1934, aged eighty years.

William H. Pallett, Crete, Nebr.; Kansas City Medical College, 1898; practitioner at Crete for about thirty years; member of the board of education twenty-five years; gave liberally of his time and service to Doane College; died of apoplexy, June 19, 1934, aged sixty-three years. A widow survives.

TUBERCULOSIS ABSTRACTS

Attention is being called to the co-existence of tuberculosis and diabetes. Is the presence of these diseases in the same individual merely coincidental or do they supplement each other in an unholy alliance to the more certain detriment of the victim? Questions of predisposition, prognosis and treatment are influenced by the answer. In a series of four articles based on an analysis of the literature and on recently ascertained facts, Howard F. Root discusses "The Association of Diabetes and Tuberculosis."

DIABETES AND TUBERCULOSIS

Diabetes mellitus seems to predispose to the development of pulmonary tuberculosis. In studying 245 cases of associated diabetes and pulmonary tuberculosis the following facts appeared outstanding.

(a) The development of pulmonary tuberculosis in juvenile diabetics occurred more than ten times as frequently as among non-diabetic grade and high school children.

(b) Pulmonary tuberculosis developed in 8 per cent of diabetic patients within three years of recovery from coma.

(c) The incidence of pulmonary tuberculosis in adult diabetics is increasing despite the general decrease of tuberculosis mortality.

INCIDENCE

1. Active tuberculosis was found in diabetics (at autopsy) between two and three times as frequently as expected.

2. Tuberculosis infection in diabetic children is more common than in school children as a whole.

3. Adult type pulmonary tuberculosis in children who develop diabetes before the age of 15, is more than thirteen times as frequent as among grade school children in general.

4. In adolescents who develop diabetes between the ages of 15 and 20, pulmonary tuberculosis was found sixteen times as frequently as among high school students in general.

5. Among diabetic adults active tuberculosis was found in 2.8 per cent.

6. Deaths from tuberculosis among diabetics increased from 4.7 per cent before June 1919 to 6.7 per cent in the period between August 1922 and November 1931.

7. Familial contact, race, occupation, housing, poverty, and alcoholism do not appear to explain the greatly increased incidence of pulmonary tuberculosis in diabetics.

PATHOLOGY

Study of 126 autopsies upon tuberculous diabetics leads to these summarized conclusions:

1. The tuberculous diabetic need not proceed rapidly to death from tuberculosis. At autopsy healed and healing lesions are frequent.

2. Primary foci occur in childhood and areas of calcification in the parenchyma were observed in 76 out of 87 chest films of adult tuberculous cases.

3. Miliary, meningitic and acute generalized tuberculosis are rare.

4. Caseation and cavitation involve chiefly the upper lobes although the first lesions of reinfection were sometimes observed at or below the level of the hilum.

5. Acute pneumonic or miliary processes were found usually as terminal events in a chronic pulmonary process.

6. The presence of large caseating lymphatic glands together with pulmonary tuberculosis in five cases resembled the tuberculosis of Negroes.

7. Because of primary infection early in life, dia-etics are highly sensitized. Their resistance seems o have been normal until diabetes developed.

8. Etiologic factors introduced by diabetes are con-erned chiefly with changes in body chemistry which nay favor multiplication of bacilli or development f variants. These include disordered protein and at metabolism with increased amino acid nitrogen nd glycerol in the tissues, induced especially in pe-iods of acidosis.

9. Contact with open cases is known in a suffi-ient number to make evaluation of other factors dif-icult.

CLINICAL FACTS

The clinical data which were obtained from 245 uberculous diabetics include the following:

1. Only 10 were discovered with a minimal pul-nonary lesion. Tardy diagnosis characterizes diabetic uberculosis.

2. Onset of tuberculosis was subsequent to onset f diabetes in 85 per cent of the cases.

3. Although both sexes were equally infected early n life, male diabetics are almost twice as likely to reak down in adult life with pulmonary tuberculosis s are females.

4. The average loss of weight for 219 cases was 2 pounds and in 24 cases the average was 88 pounds.

5. Marked gain in carbohydrate tolerance during dvancing tuberculosis occurred in a few cases.

6. Comparison of onset-symptoms and physical igns with those in non-diabetics shows no special nsidiousness in the development of tuberculosis in he diabetic.

7. No special diabetic type of lesions was observed (by roentgenograms) although exudative, pneumonic ypes with cavitation frequently developed in patients with evidences of previous infection.

8. The incidence of pulmonary tuberculosis in-reases with the duration of the diabetes. Among 19 males with diabetes over 20 years, 3 or 16 per cent had active pulmonary tuberculosis.

9. In childhood, skin tests with tuberculin were positive in 46 per cent of cases both in Boston and in Vienna. Among 201 diabetic children calcified tracheo-bronchial glands were found in 42 per cent in the first decade and 74 per cent in the second decade of life.

10. Of seventeen cases of adult type tuberculosis in juvenile diabetics, eleven are still living with diabetes of nine years' duration and tuberculosis of at least three years' duration.

11. In 49 cases, tuberculosis developed after the age of 60 years. Processes apparently latent for years developed activity after onset of diabetes.

PROGNOSIS

The prognosis for the diabetic patient with tuberculosis was considered practically hopeless before the use of insulin. All statements in the past have been based upon tuberculosis discovered in an advanced state. At present insulin and modern dietary treatment distinctly improve the prognosis in preventing death from coma and in maintaining better nutrition. Collapse therapy in properly selected cases is an additional favorable factor.

PREVENTION AND TREATMENT

1. In order to promote good nutrition and resist-nce to tuberculosis, the use of insulin should be begun immediately in all youthful diabetics.

2. Considering age, weight and diet the tuberculous diabetic required about the same insulin dose as the non-tuberculous case. The average daily dose in 18 cases of tuberculosis and diabetes at the Deaconess Hospital between the ages of 15 and 29 years was 39 units.

3. Serious hypoglycemia must be guarded against by the cautious use of insulin in severely ill, or emaciated tuberculous diabetics.

4. Sixty-nine fatal cases of tuberculosis and diabetes treated with insulin lived 8.6 years, whereas, 90 fatal cases treated without insulin lived only 5.4 years after onset of diabetes.

5. The last ten cases of active tuberculosis and diabetes with fever at the Deaconess Hospital received an average diet of carbohydrate 157 grams, protein 83 grams, fat 116 grams, calories 2,004 and insulin 42 units.

6. Coma cases should be followed up yearly by x-ray examination for the detection of developing tuberculosis.

7. Eighteen cases alive in 1933 have survived active pulmonary tuberculosis for an average of 9.0 years.

8. The recognition of pumonary tuberculosis in a truly incipient stage in a diabetic is almost unknown in the literature. Ten cases occur among 245 in this series.

9. Prognosis for the tuberculous diabetic depends upon earlier diagnosis of the tuberculosis by more frequent physical and x-ray examination.

10. Lack of control of the diabetes increases the chance of developing tuberculosis, as indicated by the frequent development of tuberculosis in cases who have had coma.

11. Preventive measures include early aggressive diabetic treatment, and good hygiene.

The Association of Diabetes and Tuberculosis, Howard F. Root, New England Jour. of Medicine, Jan. 4, Jan. 11, Jan. 18, Jan. 25, 1934.

NEBRASKA PHYSICIANS AT THE A. M. A. MEETING

Ainlay, George W., Fairbury.
Arnold, Charles H., Lincoln.
Bailey, B. F., Lincoln.
Best, R. Russell, Omaha.
Bennett, A. E., Omaha.
Blume, W. R., Minden.
Borghoff, John A., Omaha.
Brimmer, K. W., McCook.
Burrell, R. H., Creighton.
Carnazzo, S. J., Omaha.
Duncan, J. W., Omaha.
Dunn, F. Lowell, Omaha.
Fouts, R. W., Omaha.
Guildner, C. W., Kenesaw.
Hamilton, H. B., Omaha.
Harvey, Andrew, Fremont.
Hays, Edward R., Falls City.
Heine, W. Howard, Fremont.
Henry, Edwin C., Omaha.
Henske, Jos. A., Omaha.
Hunt, Howard B., Omaha.
Keegan, J. Jay, Omaha.
Kelly, James F., Omaha
King, Dexter D., York.
Kirk, Esley J., Omaha.
Korol, E., Lincoln.
Lang, Oscar F., Falls City.
MacQuiddy, Ernest L., Omaha.
McCarthy, J. D., Omaha.
McCurdy, T., Omaha.
McGuire, L. D., Omaha.
Moody, W. B., Omaha.
Moritz, John R., Beatrice.
Orr, H. Winnett, Lincoln.
Overgaard, A. P., Omaha.

Quigley, D. F., Omaha.
Rorer, Emily F., Santee.
Rowe, Edward W., Lincoln.
Rubnitz, A. S., Omaha.
Sachs, Adolph, Omaha.
Schrock, Robt. D., Omaha.
Simmons, Eugene E., Omaha.
Skinner, George A., Omaha.
Smith, Arthur L., Lincoln.
Steenburg, Edmund K., Aurora.
Swab, Charles M., Omaha.
Thomson, J. E. M., Lincoln.
Tomlinson, C. C., Omaha.
Tyler, Albert F., Omaha.
Warner, Ruth A., Lincoln.
Wegner, Ernest S., Lincoln.
Wherry, W. P., Omaha.
Zemer, S. G., Lincoln.

THE SOCIETIES

The **Sixth Councilor District Medical Society** met at David City, June 7, with dinner at the Perkins Hotel.

Dr. Edwin G. Davis, Omaha, talked on "Prostatic Obstruction"; Dr. Rodney Bliss, Omaha, discussed the "Kidney in Prostatic Obstruction"; Dr. Warren Thompson, Omaha, spoke on the "Heart in Prostatic Hypertrophy."

Dr. C. W. Way, Wahoo, was elected president; Dr. Brillhart, Shelby, secretary-treasurer.

About fifty members of the **Republican Valley Medical Association,** the tenth councilor district of the Nebraska State Medical Association, and their wives were in session at the Hastings State Hospital.

The morning was occupied by a clinic conducted by Dr. J. C. Nielsen, superintendent of the institution, and his staff. The members were guests at the institution for luncheon and heard Dr. J. Bixby of Geneva, president of the state organization.

The afternoon program was put on by Dr. John Thompson, Lincoln, and Dr. A. E. Bennett, Omaha.

HUMAN INTEREST TALES

Dr. Clyde W. Wilcox has located at Ansley.

Dr. A. M. Poore has located at Gordon, Nebr.

Dr. J. W. B. Smith, Albion, made a trip to Colorado, recently.

Dr. C. C. Crawford has moved to Haighler, from Wray, Colo.

Dr. V. D. Douglas, Crab Orchard, was reported ill early in June.

Dr. F. J. Wurtele, North Platte, is a candidate for the state senate.

Dr. F. J. Kalal, Creston, submitted to an operation in Omaha recently.

Dr. J. Calvin Davis, Omaha, is the present head of the local Lions club.

Dr. Richard Young, Omaha, submitted to an appendectomy, recently.

Dr. J. R. Beatty, Butte, has about recovered from a very serious illness.

Dr. Charles Way has been reelected president of the Lions club of Wahoo.

Dr. C. D. Heine, Hooper, has become president of the local Commercial club.

Dr. Frank M. Tushla, and Miss Ruth J. Shelley, Auburn, were married June 4.

Dr. C. B. Galbreath, Hastings, underwent a serious operation in Omaha early in June.

Dr. Victor E. Levine has gone north to study nutritional habits among the Esquimos.

The marriage of Dr. E. C. McAleer and Miss Virginia B. Milstead of Peru is announced.

Dr. H. L. Clarke, North Platte, took a postgraduate course in surgery in Chicago, in June.

Dr. W. Kirk Riley and family, Fort Lyon, Colo., visited his father at Wisner early in June.

Dr. Rudolph Rix, Omaha, has become president of the Omaha-Douglas County Medical society.

Dr. Olga Stastny, Omaha, will conduct a party to and through parts of Europe, sailing July 25.

Dr. J. F. Lukovski, Omaha, spent some time in the study of obstetrics at the Mayo clinic, recently.

Dr. Herbert Worthman and Miss Margaret McShane, both of Louisville, were married June 4.

Dr. Marie Morse, Wisner, and members of her family, are touring the Pacific Northwest coast.

The marriage of Dr. Wayne McNerney, Lincoln, and Miss Clara McGahan, Omaha, is announced.

Announcement is made of the marriage of Dr. L. W. Bowman, and Miss Rena Moscrip, Alliance, May 26.

Dr. J. K. Morrow, Norfolk State Hospital, was recently honored by a fellowship in the American Psychiatric association.

Dr. S. A. Lutgen, Wayne, has resumed charge of the hospital he formerly owned but had transferred to the Good Samaritan order.

Dr. Milan Baker, Temple University Hospital, Philadelphia, spent the month of June visiting his mother and family in Norfolk.

Dr. F. W. Heagey, Omaha, was re-elected president of the Nebraska Tuberculosis association at the annual meeting at Lincoln, May 22.

A new park at Wynot has been named "Tellesen Park," honoring a beloved local physician who recently died following an auto collision.

Dr. Alice Kani, Omaha, and members of her family have gone abroad partly for study in Vienna and partly for travel in central and southern Europe.

Dr. and Mrs. C. E. Slagle, Alliance, sailed for Europe, June 30. They will visit tourist spots in England and attend the Passion Play at Oberammergau.

Dr. Clarence Rubendall, Omaha, was elected president of the Nebraska Academy of eye, ear, nose and throat surgeons, at the annual meeting in Lincoln, May 21.

Dr. A. J. Brown, Omaha, attended the meeting of the American Surgical Association at Torondo, Canada, and the meeting of the American Association for the Study of Goiter at Cleveland in June.

Dr. H. A. Benson, Oakland, was elected president of the Nebraska University Medical Alumni at their annual luncheon at the Cornhusker hotel, Lincoln, during the meeting of the Nebraska State Medical Association.

Dr. Bertha M. Thompson, Lincoln, was re-elected president of the Nebraska Association of Medical Women at the meeting in Lincoln coincident with the annual meeting of the Nebraska State Medical Association.

Radical cases demand radical remedies, medical or otherwise.

Stern was the glance the coroner cast at the quack doctor who had just taken the witness stand.

"And when you were called in," he asked, "what did you give the deceased?"

"Give him? I gave him ipecacuanha."

"Indeed!" sneered the coroner. "And I suppose you know that in the man's condition you might just as well have given him the aurora borealis?"

"Quite so," was the reply. "That's exactly what I should have given him if he hadn't died."

OMAHA-MIDWEST CLINICAL NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. 19 Norfolk, Nebraska, August, 1934 No. 8

CONTENTS

Page
Omaha-Midwest Clinical Number........ 281
On Vacation........ 281
The Clinical Recognition of Acute Coronary Thrombosis, James B. Herrick, M. D........ 282
The Present Status of Serum Therapy in Pediatrics, Julius H. Hess, M. D........ 288
Some Commonly Misunderstood Features About Cutaneous Cancer, Fred. D. Weidman, M. D........ 295
Neurology and General Medicine, Lewis J. Pollock, M. D........ 298
The Effects of Pregnancy and Disease Upon Each Other, Hugo Ehrenfest, M. D........ 304
Dermatophytosis Down to Date, Fred D. Weidman, M. D........ 309
Birth Injuries of the Child, Hugo Ehrenfest, M. D........ 313
Acute Encephalitis and Inflammatory Cerebral Complications as Found in the General Practice of Medicine, Harrison A. Wigton, M. D., F. A. C. P........ 316
Rational Treatment of Encephalitis, G. A. Young, M. D........ 318

Omaha-Midwest Clinical Number

The Omaha-Midwest Clinics, held the last days of November and the first days of December, 1933, were such a remarkable success in the material presented by the guest speakers and local talent, as well as in the attendance and interest manifested by those in attendance as to seem to warrant publication of most of the available material in one number complimentary to the organization.

The success of the initial meeting of the Omaha-Midwest Clinical society far exceeded expectations. A fall meeting is planned for October 29th, 30th, 31st, November 1st and 2nd, 1934. and will be held as last year in the Paxton Hotel. The first four days will be devoted entirely to papers, lectures, and clinics. Tuesday evening, October 30th, all registered will be entertained at the Ak-Sar-Ben Horse Show and Rodeo.

Twelve noted speakers will constitute the guest talent for the occasion.

On Vacation

This number of the *Journal* is being published in the absence for the entire month of July of the editor, who with his wife is spending the month in the Pacific Northwest—the only absence from *Journal* duty in eight years.

The number was planned and placed in the printer's hands the last part of June. A number of the *Journal* filled solidly with original matter is somewhat of a novelty and should be a refreshing change from the old order.

THE CLINICAL RECOGNITION OF ACUTE CORONARY THROMBOSIS*

JAMES B. HERRICK, M. D.,
Chicago, Illinois.

Twenty years ago when one discussed acute coronary occlusion the audience yawned or dozed, not interested because not understanding. Today the audience yawns, not interested because the story is so familiar. You may well ask why I speak again, or yet, on a subject that is now well known to physicians, medical students and even the laity.

The subject has a claim to attention because of its intrinsic importance and also because the study of coronary thrombosis has stimulated investigation of other related cardiovascular problems. Some of these resulting by-products, anatomic, physiologic, pathologic and clinical, have a value perhaps equal to that of the coronary studies to which they owe their origin. One reason for this paper is the hope that by stressing this fact some of my younger hearers may be inspired to work along these lines. There is still much work to be done.

Every subject in medicine should have periodic revision. This is true, perhaps peculiarly true of cardiology . "Not one of its chapters is definitely closed." There is justification, therefore, for reconsidering the clinical features of coronary thrombosis even though in two decades it has come to be regarded as trite.

My second reason for writing is to try to correct certain misconceptions concerning the clinical manifestations to the end that coronary thrombosis may not be so frequently regarded as some other condition or some other disease called coronary thrombosis.

In 1930 R. W. Scott wrote: "Medical history of the future doubtless will record as one of the important contributions to medicine of the past twenty years the general recognition of coronary thrombosis." The more one considers it, the more one feels that the statement is not extravagant. Here are some of the facts:

1. It is now known that acute coronary occlusion is not merely a pathologic curiosity, a finding of the dead house. It is not always followed by sudden death; patients may live hours, days or weeks; they may recover. There must, therefore, be clinical symptoms. These symptoms have been so accurately described that in typical cases even the well informed undergraduate may make the diagnosis.

2. We question more critically such diagnoses as ptomaine poisoning, acute indigestion, acute dilatation of the heart, unexplained heart failure. We have learned that in many instances the symptoms are due to acute coronary occlusion.

3. There is less likelihood of confusing coronary accidents with acute pancreatitis, perforation of duodenal or gastric ulcer, disease of the gallbladder, acute intestinal obstruction. Unnecessary surgery is thus often avoided.

4. There has been taken from out the category of angina pectoris, or, if you please, made a subhead under it, a certain group in which coronary occlusion is now known to be the explanation of otherwise obscure phenomena. Many cases of angina without effort, unusually severe and prolonged angina followed by cardiac failure, the status anginosus, angina with fever, or with pericarditis, may be cited as examples.

5. There has been a renewed interest in, and a studying of, the normal and pathologic anatomy of the coronary artery. There have been fresh efforts to discover the causes of the morbid changes in these and other arteries and the reasons why thrombi are so often encountered.

6. Naturally, attention has not been limited to the artery itself. It has extended to the nerves and muscle of the heart, under normal and pathologic conditions.

7. The disturbance of the normal mechanism of the heart has roused, or intensified, interest in questions of physiology and even physiologic chemistry. More knowledge has been sought concerning the normal circulation in the heart, the part played by the thebesian vessels, the silent areas of the heart, the nature of certain irregularities. These problems have been attacked by methods of animal experiment, as well as by more careful observations at the bedside or at the necropsy. There has been greater effort to correlate knowledge thus obtained and to apply it to the solving of cardiac problems that are of both academic and practical importance.

8. While acute coronary occlusion has received the major attention, increasing consideration is being given to the chronic or slow form.

---

*Presented before the 1933 sessions of the Omaha Mid-West Clinical Society, October 29-November 2, 1933.

9. Myocarditis, not only acute but chronic, is being studied, by pathologists and clinicians.

10. The aid received from electrocardiography in recognizing this disease has emphasized its value in the diagnosis of heart disease in general. In return, practical electrocardiography has stimulated investigation as to the principles and facts that underlie this method.

11. The recognition of coronary thrombosis has thrown new light on angina pectoris. It has had an influence in causing a swing back to the older coronary artery theory and away from the rather revolutionary aortic theory. It has further stimulated the study of the nature of pain, not only in angina pectoris, but in vascular conditions in general.

These are some of the reasons that seem to justify the statements made by Scott.

It must not be claimed, however, that the present keen interest in cardiology is entirely due to coronary thrombosis. Far from it. When, twenty years ago, coronary thrombosis raised its head, it found the world of cardiology very much alive with every sign of rapid progress. The importance of the valves and of anatomic physical diagnosis was being pushed into the background by those who stressed the heart muscle and the impairment of function. New facts as to anatomy, physiology and pathology, new theories, a new nomenclature, new instruments of precision, were announced in such rapid succession as fairly to bewilder one. One had to discard many older notions and to learn of phlebograms and electrocardiograms, the bundle of His, the sinus node, atrioventricular block, extrasystole, to say nothing of subacute bacterial endocarditis, rate of cardiac output, pulse deficits, cat units for digitalis. It is clear, then, that coronary thrombosis can claim only a part, perhaps only a small part, of the credit for the aroused interest in, and the improved knowledge of, cardiology of the last few decades.

Passing now to the other topic. First the error of mistaking coronary thrombosis for something else. In medical diagnosis we are prone to be wedded to our early notion of the typical case e.g. of typhoid fever, tabes, appendicitis. We are still learning that some of the old triad of cardinal symptoms of exophthalmic goiter—goiter, exophthalmos, tachycardia—even with the addition of tremor and increased metabolic rate may be minimal or lacking; we are repeatedly astonished at the abortive and bizarre manifestations of this still perplexing thyroid disturbance.

So with acute coronary occlusion we have in mind a typical picture something like the following: the patient, generally an adult who may have known of hypertension or may have had angina pectoris, is seized suddenly, perhaps while quiet, with a severe substernal or upper epigastric pain that may radiate to the neck, arms or epigastrium. Contrary to the rule that holds in attacks of angina of effort the pain does not soon disappear, it lasts and requires large doses of morphine for its relief. There is evidence of shock or collapse, the countenance is ashy, the pulse weak, generally rapid, perhaps irregular, the heart tones faint. The blood pressure falls. Dyspnea may be marked. Strongly suggestive are a pericardial friction a few hours or days after the accident due to the roughening of the pericardium over the infarcted area; also a rise in temperature and a leukocytosis. Electrocardiographic changes are quite significant. Death may occur in a very short time or the patient may live days, weeks, or may recover. The heart may show that it has been hard hit, by its persistent weakness or irregularity and by dyspnea, rales, enlarged liver, albuminous and scanty urine.

Yet there is no fixed clinical picture of sudden obstruction of a coronary artery any more than there is of an obstruction of a cerebral artery. There is no infallible symptom or sign on which we may pin a diagnosis; none that can be regarded as pathognomonic, none that may not be irregular or absent. Even the supposedly reliable electrocardiogram may fail to show change. The variations in the details of the picture must depend in a measure on the suddenness with which the occlusion occurs, its measure of completeness, the size and location of the artery—some parts of the heart are less vital, more indifferent than others—and the degree to which collateral circulation may work to repair the mischief wrought in the area robbed of its blood supply. The extent of the damaged area and the amount of function lost may be influenced also by the extent to which compensatory changes in the vessels may have been going on. For instance, in a heart in which a sclerotic process has been for long present in one coronary artery, the lumen of which has been gradually becoming narrower, the other vessels because of doing more work may have increased in size. The final event in the process, the formation of a thrombus and occlusion of the artery especially diseased, finds the tissues in a sense prepared, the insult is not so overwhelming as it might otherwise have been. It is perhaps true that the most serious results have been in those whose vessels have shown comparatively little chronic change, where no previous compensatory process has taken place and where the blow falls on a myocardium unprepared for any such attack.

Strangely enough, this was the finding in the first three of my cases with autopsies, the one reported in 1912, and the two others in 1918. In these patients there had been no previous angina, there was almost no aortic sclerosis and only very moderate coronary change. One patient lived fifty-two hours after the accident, the second about two weeks, the third about three months.

In calling attention to some of the misleading or atypical features of acute coronary occlusion, it will be understood that I am discussing patients who live long enough to present symptoms. The cases of instantaneous death so well described by Krehl, the "Seckunden Tod" of the Germans, are not here considered. Nor shall I do more than mention the milder forms of coronary obstruction, or the gradual or chronic forms though they are of extreme importance in cardiac coronary pathology. Much of the future history of cardiology will center about the smaller coronary vessels, gradually developing changes in which often lead to serious disturbances of the heart.

In our minds acute coronary obstruction has so naturally and unconsciously been associated with angina pectoris, in which pain is almost by definition a part of the symptom complex, that it is difficult to eliminate from our clinical conception of the accident this feature, which is so often the dominant symptom. Yet it is clearly established that painless acute obstruction occurs and at times, when even a large artery is involved. For a fuller understanding of this absence of pain we shall have to wait until there is clarification of our ideas as to the causation of pain in arterial obstruction in general and especially in the coronaries.

How may we tentatively explain such a phenomenon? May I repeat the ideas and largely the words of my Harvey Lecture of two years ago? It has been suggested that normally certain areas of the heart are not only less vital than others—indifferent or silent, they have been called—but also less sensitive. But even if not normally relatively insensitive, they may become so. At autopsy fresh infarcts are sometimes found associated with multiple patches of fibrosis that speak for previous obstruction of small branches, yet no pain has been noted, no pain announcing even the recent infarction. There has evidently been a very gradual and progressive narrowing of the artery by sclerotic processes. The area irrigated by the artery has become relatively inactive, relatively anesthetized by destruction of vessels, nerves and functioning muscles, so that a painful response to the new obstruction is wanting. The final complete obstruction comes without a sudden shock of pain; the element of surprise is lacking, as the heart is in a sense prepared for the supreme insult. Heart failure, with its dyspnea and other phenomena, may be present but pain may be lacking. This fits in with the observation of Wearn and others that in incompetent hearts thrombosis is often painless.

The diagnosis of these painless cases may be difficult, yet is usually possible if we recognize that in place of pain other symptoms may be present, such as abrupt heart failure with dyspnea, cyanosis, and other phenomena. As expressed by Obratzow and Straschesko, dyspnea may be regarded as a pain equivalent. Or we may conceive of it as a substitution symptom perhaps especially likely to be met with in those whom Libman has called hyposensitive.

While we may, therefore, hold fast to our earlier notions that the pain of acute coronary thrombosis is not only apt to occur without the ordinary provocative cause, that it is unusually severe, of long duration, requiring heavy doses of morphine and that it is prone to be located in the lower sternal rather than in the mid-sternal region, we must yet recognize that there are so many exceptions to these classic manifestations as to make it dangerous to adhere to them too rigidly. We must be prepared for cases in which there may be no pain or pain that varies from trivial up to an extreme degree of severity, even lasting days in those fearful and in my experience always fatal, cases of status anginosus. We must expect unusual location and radiation of pain. We may see previous angina disappear after a coronary artery is suddenly occluded or paradoxically find an angina of effort dating accurately from one of these occlusive seizures. Unless we recognize the possibility of these atypical features we may easily be led astray from the correct diagnosis.

Dyspnea may be an early and marked manifestation or it may appear only later. Some believe that marked dyspnea indicates an infarction of the wall of the left ventricle rather than the right. Along with difficult breathing there may be moist and wheezing rales, cough sometimes with blood tinged expectorate, marked cyanosis. Later, Cheyne-Stokes breathing may appear, of bad omen. Areas of dullness with harsher respiration may suggest bronchopneumonic patches or the location of an infarct. Yet in the respiratory tract there is no fixed rule. One is sometimes at a loss to explain how, in a patient whose rapid pulse, feeble heart tones and lowered blood pressure speak for cardiac weakness, the lungs are free from rales and breathing is easy.

A drop in blood pressure is the rule. This may be sudden or it may be noted only after the brusquer initial symptoms have passed away. But one must be prepared to see instances in which the pressure stands up remarkably well and others in which almost unbelievable variations in pressure may occur,—a systolic pressure today of 120, tomorrow 180.

There is no fixed behavior of the pulse. Usually it is rapid, weak, with extrasystoles perhaps, or block, or spells of tachycardia or fibrillation. In other cases it is fairly full, regular, not rapid. Its instability may be revealed by extraordinary variation from day to day or hour to hour. There are instances in which the tenacity with which the heart clings to its beat, in spite of seemingly overpowering damage, is truly marvelous. In one of my early cases the patient, several hours after the accident, sitting in his chair, somewhat dyspneic and cyanotic, clear in his mind, seemingly not apprehensive, free from pain, had a pulse that was very rapid, around 150, and just barely perceptible at the wrist. The heart tones were startlingly faint. Such a pulse in typhoid fever or pneumonia would warrant a prognosis of death within an hour. This man lived about eighteen hours longer. In another patient there was along with extreme prostration and distressing dyspnea, a rapid thready pulse that for four weeks kept the attending physician predicting death within a few hours. Several times the nurse had called in the family from the nearby room, announcing imminent death. Once she declared the patient was dead. Yet somehow on these occasions the heart came back, until after four weeks it suddenly gave up the struggle, the ventricle presumably going into fibrillation.

One might dwell on other atypical features. The temperature may not rise or it may go to 102 degrees or over. It may rise early or only after three or four days. The leukocytes vary in number; sometimes there is no increase. I have seen counts of between 30,000 and 40,000. Pericardial friction is, I believe, oftener unrecognized than heard. We need not wonder at this. The infarcted area may not reach to the pericardium; then friction will be lacking. Or it may happen that the portion of the epicardium involved is located behind or laterally, and is inaccessible to auscultation. Furthermore, pericarditis is rather illusory, the rub being at times soft, evanescent, or even inaudible. I once saw an unquestioned case of acute occlusion in a man of sixty. The physician in attendance was wide awake to coronary disease. He assured me that twelve hours before there had been no pericardial friction. At the time of the consultation there was a friction rub that was as loud and coarse as any I have ever heard in any form of pericarditis. The next day it was inaudible.

Embolic phenomena may appear early or late. The intracardiac thrombi that form over the infarcted area may be in either the right or left heart. When the septum is involved there may be thrombi in both ventricles. Emboli may, therefore, plug the pulmonary arteries or those of the systemic circulation. We thus have the symptoms of pumonary embolism often with infarction; or such phenomena as cerebral monoplegia or hemiplegia, mesenteric obstruction, splenic or renal infarction, etc. Some points in this connection will be taken up later.

A word concerning electrocardiography as an aid in diagnosis of acute coronary obstruction. I take the liberty of quoting freely from an address delivered in 1932 before the California Academy of Medicine. The early electrocardiographic work on dogs with experimental myocardial infarcts and the later reports of electrocardiograms in patients showed such uniformity in the variations from the normal that the impression was gained that there was always a characteristic and fixed picture. Inverted T waves, "the coronary wave," slurrings and broadenings of QRS were spoken of as sure indications of coronary occlusion. But earlier notions as to the worth of a diagnostic procedure frequently have to be revised. The result of a Wassermann test is accepted much more cautiously today than when the test was first brought to notice. The interpretation of chest films is made much more circumspectly than when the x-ray was first used in the diagnosis of pulmonary tuberculosis. Similarly there has developed a healthful skepticism as to the interpretation of electrocardiograms in the diagnosis of coronary obstruction. Yet there is still frequently seen a cocksureness in the reading of these tracings that is unwarranted by our present knowledge. I shall speak briefly concerning a few of these features that are misunderstood or are still sub judice.

A prevalent error is to forget that for a long time, many weeks at least, the process going on in the heart is one of progressive change. Obstruction, anemia, softening, infarction, repair, fibrosis, altered collateral circulation, altered conduction, altered local nervous conditions, are reflected in a modified and constantly varying electrocardiogram. The immediate high T wave found by Fred Smith in his dogs, with the abnormal take-off from R that has later been stressed, is soon followed by the inversion of T with its union with R above or below the line, often with the convexity and sharp T angulation first mentioned by Pardee. Then follows the gradual return to, or even above the isoelectric line. The tracing, therefore, the day of the accident will probably be a very different one from that revealed a few days or weeks later. Change may be going on even months after the initial accident. The quantitative and qualitative abnormalities in the height and breadth of peaks, in slurrings, notchings, acuity of angles, modification in the straightness or curving of lines, will depend not alone on the size, location, functional value of the artery, and the dependent area in the myocardium, but also—an important point—upon the time that has elapsed since the accident and the degree to which repair has succeeded in bringing about a condition that approaches the old normal. This fact, noted by Smith, had been referred to by early experimenters like Eppinger and Rothberger and Samajloff; it has been stressed in the very title of Parkinson and Bedford's article, "Successive Changes in the Electrocardiogram after Cardiac Infarction (Coronary Thrombosis)." It is the theme of several valuable papers by recent writers. Yet clinicians, laboratory workers, and technicians too often forget this fact of the instability of the electrocardiogram that may be an important aid in diagnosis.

Another error that is sometimes made is to interpret whatever abnormal and bizarre tracings are seen as due to a recent, at least previous, acute obstruction. Acute obstruction is by no means always the cause. Chronic myocarditis sensu striciori, or the hypertrophied heart of hypertension, may deform the electrocardiogram when no acute obstruction has taken place. Also, gradual obstruction in a sclerotic vessel with slowly developing fibrosis may long antedate present symptoms and explain a distorted tracing. If we had the opportunity to check up on these patients for months or years, we might observe what Clerc aptly calls the slow evolution of the abnormal electrocardiogram, the development of extrasystoles, broadening and flattening of different complexes, strange shifts above or below the isoelectric level, paroxysms of tachycardia or fibrillation, and finally complete "anarchy."

Interpretations, then, are far safer when electrocardiograms are made serially, by which the activity of a myocardial process may be revealed. They are safer when made in conjunction with the present and previous history of the patient. They are safer when helpful comparison with earlier tracings can be made.

Finally a few words concerning the danger of diagnosing coronary occlusion when some other condition is at fault. There is a good deal of truth in the statement of Meakins and Eakin that coronary thrombosis has been so much written about and is so common that it has become almost the fashion to regard as a coronary accident every case with severe epigastric pain, nausea, shock, and disturbed pulse, some fever, and leukocystosis. It is forgotten that there are many other conditions that may cause symptoms that may resemble sometimes in a very puzzling manner, this now well known disease.

The differential diagnosis is by no means always easy. At times one must wait for later events to disclose the real nature of the ailment. At times, exploratory operation is permissible and strongly indicated.

I have listed twenty-six conditions that I have personally seen wrongly called acute coronary occlusion. Some of these mistakes have been my own. The reasons for such mistakes have been (1) lack of exact knowledge of coronary thrombosis or of the other disease; (2) a preconceived notion of the nature of the illness, a snap diagnosis, so-called, that has led to an incomplete or careless examination; (3) failure to exclude the other disease because not thinking of it. In most instances a diagnosis could have been made with reasonable certainty. In some the error was avoidable only by time or repeated examinations. In some I do not see how a positive diagnosis was possible.

Especially perplexing have been a few cases in which a patient has had two pathologic conditions either one of which might cause the symptoms—coronary thrombosis associated with gall stones, pulmonary embolism or parolysmal tachycardia.

I present the list commenting briefly on a few.

1. Angina pectoris, i.e., paroxysmal angina often called angina of effort.

2. Tachycardia. Paroxysms of tachycardia of auricular origin may cause pain, feeble pulse, the countenance may be pale, there may be nausea or dyspnea. Ventricular tachycardia, at times painless, may stimulate coronary thrombosis or be a consequence of it.

3. Extrasystoles, especially in a neurotic individual.

4. Heart block.

5. Pericarditis. Pain that is often epigastric, dyspnea, rapid irritable pulse, pallor, nausea, fever, may be misleading. The electrocardiogram may resemble that of coronary thrombosis, especially when there is much effusion. The physician may easily interpret the pericarditis as revealed by a friction sound as secondary to the extension of the infarcted area to the epicardium, i.e., he regards the pericarditis as the result of the coronary accident and not the primary cause of the misleading symptom.

6. Rupture of the aorta into the pericardium. This was the terminal event in a case of dissecting aortic aneurysm in which we doctors in the case for several weeks patted ourselves on the back for recognizing the dissecting aneurysm but fell down in calling the hemorrhage into the pericardium a coronary thrombosis.

7. Pleurisy.

8. Lobar pneumonia.

9. Bronchitis.

10. Bronchopneumonia.

11. Acute pneumothorax.

12. Massive collapse of the lung. As a postoperative complication it may resemble very closely coronary thrombosis. The physical signs showing dislocation of heart and mediastinal contents toward the affected side aid in diagnosis as does the x-ray.

13. Pulmonary embolism often with infarction. This deserves more extended notice. A clot from varicose veins of the extremity or from veins in the abdomen that were thrombosed before an operation or after it, lodges in a pulmonary artery. Pain, shock, rapid pulse, dyspnea, cough, fever, leukocytosis, weak heart, drop in blood pressure may result. An electrocardiogram with distortions commonly called characteristic of coronary obstruction is not unusual. Even the jaundice sometimes seen in coronary thrombosis may be found in pulmonary infarction. It is especially confusing when one realizes that pulmonary embolism is a not uncommon complication of acute infarction of the myocardium of the right heart or septum. Watchful waiting, study of the case, or the autopsy will generally reveal the facts. Among other instructive articles on this topic I may mention those by Mosler and by Hamburger.

14. Eventration of the diaphragm. In one perplexing case of this kind the x-ray definitely revealed the condition.

15. Hernia of the diaphragm. This condition, not so very rare as shown by statistics of x-ray laboratories, is often symptomless. At times, however, it may produce sudden seizures with epigastric and thoracic pain, shock, dyspnea and a picture not unlike coronary thrombosis. Recently in the case of a physician who came to me with his own diagnosis of angina or coronary thrombosis, I suspected from his past history that his attacks were really due to gall stones from which he also thought he had suffered. An x-ray examination showed a lemon-sized hernial pouch of the stomach pushing through the esophageal opening. As I write these lines I am puzzled over the case of a man of fifty-eight who four days ago had what seems like a coronary thrombosis yet in whom several of the cardinal symptoms are lacking. His past history is not unlike that of some such condition as diaphragmatic hernia. I am curious to see what would be the revelations of the barium meal but am timid about putting him through this test even though he be kept prone all the time.

16. Tabes with gastric crisis.

17. Herpes zoster, two cases.

18. Arthritis in the cervical and dorsal vertebrae and costochondral junction.

19. Cardiac neurosis, a common error.

20. Acute disease of the gallbladder, inflammation, gall stones.

21. Prancreatitis.

22. Spastic colon.

23. Ileus.

24. Acute indigestion. I still think such a diagnosis is allowable at times—the green apple variety of indigestion.

25. Ulcer of the duodenum or stomach. In one case a pinhole perforation with slow leak caused pain, fever, nausea, etc. The board-like hardness of the abdomen with a definite tender-

ness on pressure gave the clew that led to the life-saving operation. In another case a bleeding duodenal ulcer with probable perigastritis caused pain, pallor, rapid pulse, nausea, slight temperature, leukocytosis. From the past history the case had been looked upon as one of spastic bowel. The significance of the pallor, the hemoglobin down in the fifties was, therefore, overlooked. The rectal examination showed black tarry blood in abundance and cleared up the diagnosis.

26. Diabetic coma. One sees true coronary thrombosis in diabetes but should not forget that coma without coronary thrombosis may simulate coronary accident with its pain, dyspnea, altered pulse, and temperature, sclerotic vessels, perhaps previous angina.

To conclude—in venturing to speak once more on a topic already well known I have aimed to emphasize the importance of the subject and to note some of the additions to knowledge that have, as by-products, come from a study of coronary thrombosis. Secondly, to call attention to the fact that there is still much to learn about coronary thrombosis even its clinical manifestations. The correction of certain misconceptions may help one avoid errors in diagnosis.

THE PRESENT STATUS OF SERUM THERAPY IN PEDIATRICS*

JULIUS H. HESS, M. D.,
104 South Michigan Ave.,
Chicago, Illinois.

In discussing the present status of serum therapy in pediatrics, it will be considered from the standpoint of available serums. These are the antitoxins, the antibacterial serums, those containing these elements in combination, and the human convalescent serums.

A potent serum corresponding immunologically to the infection to be treated, given in sufficient dosage early in the disease should be of aid in bringing about recovery if no serious complicating factors exist. The value of the serums decreases as the dose is diminished from the proper level or as the disease progresses. It should be further remembered that the passive immunity conferred by heterologous immune serums is of short duration, lasting on the average only some two weeks or slightly longer. For a further understanding of the curative value of this class of products it may be mentioned that with most antitoxins laboratory tests give an accurate estimate of their actual immunizing value, but with antibacterial serums the parallelism is by no means so close. This is because of the difficulty of reproducing in suitable experimental animals such infectious diseases of man as pneumonia or meningitis, although such toxemias as diphtheria and tetanus may be approximated closely enough in guinea pigs and other common laboratory animals. There still remains the little understood realm of the nonspecific stimuli of which serum proteins are capable. It should be borne in mind that the injection of foreign protein, especially in the amounts represented by the average serum dose, alters the individual's physiological response to subsequent injections of a similar protein. For this reason the free use of antitoxic or other serums, unless the condition strongly warrants their administration, should be deprecated.

DIPHTHERIA ANTITOXIN

This serum represents one of the greatest advances in applied immunology. From time to time its antitoxic content per given volume has been increased, the product has become more stable, and has been freed to a large extent from the non-antitoxin proteins. This serum has been used in both active and passive immunizations as well as in therapy.

In diphtheria the toxin unites first with the adjacent tissues, the excess passing by way of the lymphatic channels to the blood and so throughout the body. Two factors are of great aid in the matter of treatment with this serum: First, that in an ordinary case of diphtheria only a very moderate amount of toxin escapes being fixed by the local tissues at the seat of the disease and passes to the blood within the first 24 hours; in the second place, there is a period of a few hours after the toxin has come into contact with the cells when the union is incomplete and the toxin can still be neutralized by the antitoxic serum.

Intramuscular administration is recommended for mild and moderate cases, while in severe cases, those showing laryngeal involvement, and neglected cases of the nasal type, both intravenous and intramuscular administration are recommended. It is to be remembered that serum is absorbed from an intramuscular injection to produce a maximum blood concentration within 24 hours, whereas in an intravenous injection the total antitoxin is available almost immediately.

---

*Presented before the Omaha-Mid-West Clinics, Omaha, November-December, 1933.

The serum is most valuable when the entire dose is given at the first injection and in sufficient quantities to meet the exigencies of the case. Schick, Park, and others recommend that 500 units per kilo of body weight be administered in the severe cases and smaller amounts per kilo in the very early and mild cases. Personally I have repeatedly exceeded this dosage at the first injection, even to two or three times the amount. Any hesitance about dosage should be dispelled by the decision to administer the larger amount recommended.

Any suspicion that a patient is suffering from diphtheria demands the immediate injection of antitoxin in full doses without waiting for a bacteriologic report.

The guiding principle in the treatment of diphtheria is early and adequate serum administration.

TETANUS ANTITOXIN

The specific treatment of tetanus with tetanus antitoxin was introduced more than thirty years ago. Although it has been employed extensively since that time, the voluminous literature that has accumulated is quite diverse and conflicting in regard to the value and methods of serum administration in cases of tetanus.

The great experience with the prophylactic use of this serum during the World war has done much to clarify our knowledge of its value. It has been generally accepted that a prophylactic dose of 1500 units administered shortly after the wound was received and preferably at the site of the injury, would ward off tetanus if the wound was slight or required no further surgical interference. The protection was not sufficient, however, to prevent development of the infection in those cases requiring subsquent operation. The method, therefore, recommended is to give antitoxin not only at the time of the injury but before each surgical operation. This rule should hold in civil as well as in military life. In cases not requiring operation and where there is no doubt as to the need for further serum it should be repeated at weekly intervals at least, until the injury is healed.

In the field of therapy, however, the use of serum has not been attended with the same success. One fact is outstanding to the effect that every hour lost after development of symptoms makes the prospect of success less bright. It is a well established fact that cases developing clinical symptoms of the nervous system during the first four to eight days show exceptionally high mortality while those developing in the second week show a much lower death rate and not infrequently recovery without therapy.

The following is the routine treatment of tetanus now in force at Cook County Hospital:

1. *Sedative therapy*—Before *anything* else is done for the patient, adequate sedation is obtained. This should be accomplished promptly. Avertin fluid (tribomethanol amylene hydrate) has shown itself to be the drug of choice. Always start with a small dose, since an exhausted patient may go into collapse following a dose of avertin fluid which can be tolerated by a normal individual. It is usually safe to begin with a maximum of 50 milligrams per kilogram body weight, being given as an enema. If the convulsions are not controlled by this dose, gradual additions of the drug may be made until the desired effect is obtained; i. e., relaxation and control of convulsions. Prepare the enema strictly in accordance with directions as diarrhea may follow if this is not done and the drug must then be discontinued. If the dose of avertin required to produce relaxation is not sufficient to produce sleep, and if sleep becomes desirable, sodium amytal may be given by mouth and rectum for this purpose. In certain cases it may be attempted to prolong the action of avertin by subsequent administrations of small doses of morphine sulphate, the avertin being resumed as the morphine additive effect disappears.

2. *Antitoxin therapy*—Antitoxin should be given as promptly as possible, but not until the patient is under the control of the sedative. Avoid doing a spinal puncture except when doubt exists concerning the diagnosis. Spinal punctures and intraspinal serum injections cause headache, fever, and in many instances may start convulsions of a serious nature. Give a single intravenous injection of antitoxin. Often it is preferable to dilute the serum with normal saline and to administer it by gravity, thereby reducing the possibility of sudden anaphylaxis. In cases with incubation periods of about a week approximately 60,000 units may be employed. In those with shorter periods of incubation, doses up to 200,000 units might be recommended. It is the first injection which is of definite value. In most cases subsequent injections can be avoided.

In all cases be prepared to treat anaphylaxic shock with adrenalin.

3. *Surgical treatment*—Surgical treatment is not an emergency. Under no condition is the patient to be taken to the surgical operating room until the convulsions have been controlled. In

general, only such surgery is to be recommended as would be justified in the absence of tetanus.

4. *Nursing and medical attention. Symptomatic treatment*—A special nurse is to be on duty with the patient at all times throughout the 24 hours as death from asphyxia may occur in the absence of some person to detect its sudden occurrence.

Patients who are unconscious from large doses of sedatives often require frequent aspiration of the nasopharynx. This aids in the prevention of aspiration pneumonia. Frequent changes of position, when the patient is sound asleep, also serve to prevent pneumonia.

Close attention is to be given to the fluid intake. Dextrose, or other sugar, is especially indicated in the first stages of control because of previous starvation and exhaustion. The feeding schedule and manner of feeding are to be determined by the condition of the patient.

The patient should have frequent sponge baths, as discomfort from heat and perspiration is a cause of restlessness and even of convulsions.

The occurrence of the serum reaction from the fifth to the tenth days of the disease (after administration of serum) is a critical period. Convulsions may recur in alarming severity and cause sudden death from asphyxia. Consequently, adrenalin hypodermically should be used as often as necessary, together with the local application to the general body surface of carbolized calamine solution to which menthol has been added in appropriate dosage. In addition, sedative therapy should be carefully watched during this period. Asphyxial difficulty should be controlled by sedative therapy in proper dosage.

Blood transfusion—In case of severe exhaustion, blood transfusions may cause marked and sudden improvement. The blood should be given as slowly as possible because of the state of exhaustion.

ERYSIPELAS ANTITOXIN

The new preparations are both antibacterial and antitoxic, having been developed in the blood of the horse as a result of the graded injection of toxins and living cultures of streptococcus erysipelatis.

Gordon and Young report that the results obtained with the serum were sufficiently gratifying in 248 cases to warrent further studies. Reports from Bellevue hospital are to the effect that they have experienced good results with the newer products now on the market.

In the evaluation of what may be expected from treatment with this serum, several factors warrant consideration: The age, especially in children, is most important—very young infants show the least response; variations in the severity of the disease from year to year are quite marked; and the distribution of the erysipelas lesions on the body affect the severity of the disease profoundly.

ERYSIPELAS CONVALESCENT SERUM

Convalescent serum has also been used with variable success in the treatment of this disease. The antitoxic and antibacterial titer must be quite low because of the ready susceptibility of recently recovered patients. In some cases early administration of a large dose of convalescent serum (60-80 cc.) is attended by a drop in temperature and rapid improvement in the general condition; repeated dosage may be necessary. In other instances, results have been unsatisfactory. In the latter I have seen some instances of marked improvement following the additional use of the newer preparations of erysipelas antitoxin.

In Cook County hospital as well as in private practice I have experienced some very gratifying results by the daily repeated intramuscular injection of from 20-40 cc. of whole blood, especially in the case of young infants. Where blood is used it is well to take it from the individuals who have in the past shown a marked resistance to streptococcus infections. In older children I have seen many striking results following *intravenous transfusion*. The danger of infecting the donor must be borne in mind and careful surgical technique must be employed.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN

I shall quote from the minutes of the Round Table Conference on Scarlet Fever at the 1932 meeting of the American Academy of Pediatrics in New Orleans.

Passive immunization:

"Because so few people contract scarlet fever unless directly and intimately exposed, because even then the contagious index is low, because of the fact that the therapeutic sera sensitize to horse serum, and finally because we do not feel that there has been sufficient data of a conclusive nature to prove that there is protection established by the injection of scarlet fever antitoxin, we feel that the prophylactic use of scarlet fever antitoxin is not to be recommended. If passive immunization has to be employed, we feel it should be with convalescent scarlet fever serum."

In conclusion the committee reported:

"From a practical standpoint we would hesitate to recommend the use of scarlet fever antitoxins except in the occasional case and only when the patient has a strictly toxic type of the disease."

I quote further from the U. S. Treasury Department Public Health Service Bureau No. 1519, Title—Scarlet Fever Streptococcus Antitoxin in the Treatment of Scarlet Fever, by M. V. Veldee, F. E. Stevenson, and A. Graeme Mitchell.

"That the antitoxin has a specific neutralizing effect on the toxin in vivo is indicated by the decrease in the duration of the rash, by a change in the character and extent of the desquamation, and by a reduction in the number of complications. That it failed to neutralize completely the damaging effect of the toxic substances produced by the scarlet fever infection is suggested by the failure of the rash to disappear promptly, by the continuation of the fever, and by the appearance of complications in a certain number of serum-treated cases.

"These failures may have been caused by (a), too small a therapeutic dose, (b) an improper method of administration, (c) administration too late in the disease, or (d) an inadequacy of antitoxin to neutralize all of the toxic substances elaborated in this disease. It is our belief, and this is confirmed by other clinicians and by investigations of the action of scarlet fever toxin, that early administration of antitoxin and its rapid dissemination throughout the body of the patient are essential; the toxin being elaborated very early in the disease and causes early tissue damage.

"The probability of serum sickness must also be weighed in the use of scarlet fever antitoxin."

SCARLET FEVER CONVALESCENT SERUM

Serum prepared from convalescent scarlet fever patients has been used quite widely and with satisfactory results. It is now available in Chicago.

Observations made at Chicago Municipal Contagious Disease Hospital lead us to believe that to obtain the maximum beneficial effect convalescent serum should be administered early and in large doses. 40-60 cc., repeated as indicated. I have seen most striking results in early toxic cases.

Gordon has pointed out that the convalescent serum is desirable because no reactions occur. In prophylaxis the convalescent serum has proven especially valuable. F. M. Mender treated 450 contacts with 7.5 cc. of pooled serum with the disease developing in 2.9 per cent against 32 control untreated contacts of whom 12.8 per cent contracted the disease. Our own experience indicates an even greater percentage of protection although our series is much smaller.

Where convalescent serum is not available, whole blood intramuscularly from cases known to have had scarlet fever may be tried.

Among the striking therapeutic results none are more gratifying than the recoveries one sees following massive intravenous transfusion in toxic and occasionally even septic cases of scarlet fever. Proper typing is essential. The ideal case is one recently convalescent from scarlet fever or when such a case is not available, the second choice lies in the donor who has had scarlet fever. I have found it necessary to repeat the transfusion as often as four to eight times. The end result justifies the means adopted. Careful surgical technique is paramount.

ANTIMENINGOCOCCIC SERUM

In meningococcus meningitis the use of antimeningococcic serum has brought about a marked reduction in fatality and in the physical damage that follows such infections. Its administration is indicated in every case of meningitis due to meningococcus and may be given to advantage in many cases before a definite bacteriologic diagnosis has been established.

When injected into the spinal canal the dose should be slightly smaller in amount than the spinal fluid withdrawn, and it should be injected slowly and under gravity pressure—not by syringe. The relief of pressure by withdrawal of spinal fluid is often of great value in relieving the symptoms. This is especially true after the spinal fluid becomes bacteriologically negative.

Intravenous injection of the serum is recommended in the early stages of the disease in conjunction with the intraspinal administration. During the past year I have seen a number of cases in which cultures from the spinal fluid remained negative but blood cultures showed the presence of meningococcus bacteroemia. In some of these cases intravenous injection only was used with early and complete recovery.

There is a special indication for the administration of serum intravenously when petechial hemorrhages are present. Many physicians administer serum intravenously in conjunction with intraspinal therapy in all cases It may be given shortly following the first intraspinal injection or a few hours afterward. The amount given intravenously should vary from 15 to 100 c. c. depending upon the age of the child or the condition of the adult. It is well to dilute this serum with two to three times the amount of normal saline solution when administered intravenously. In the average case one or two intravenous administrations are usually sufficient if the case is seen early in the disease. When administering the serum intravenously, adrenalin should be at hand for emergency administration.

A hypertonic glucose solution intravenously warmed at body temperature will often relieve the symptoms due to cerebral edema following intraspinal administration. Care should be taken in the selection of glucose to be used.

The amount of serum administered to the average case by both routes usually does not exceed 150 c.c.

Administration of serum in the cisterna magna in the presence of a block in the spinal canal is often necessary in young patients. In the exceptional case, intraventricular administration may be necessary.

We shauld bear in mind that from year to year the strain or strains of meningococcus causing the infection may be of a type not covered by the usual serums. In meningococcus meningitis, wherever possible, the organism present in the spinal fluid should be isolated and carried under cultivation. Then, should the patient fail to respond satisfactorily to treatment with the particular preparation used, it may be possible by simple agglutination tests to select another lot or make of serum which will have a higher antibody content for the strain involved. The serum treatment of meningococcus meningitis should, therefore, always be accompanied by careful bacteriologic and serologic control. Alternate use of serums from more than one manufacture may be considered as good practice.

ANTIPNEUMOCOCCIC SERUM

Long-continued laboratory study has proved that the introduction of dead pneumococci (of Types I and II, at least) into the animal body leads to an active immunity as shown both by resistance to subsequent infection and by the presence of agglutinins, protective and other antibodies in the serum, Type I prepared according to the original or modified method of Cole and that of Felton, administered in full doses within the first three days of the attack, frequently checks the disease and reduces its fatality. Antipneumococcic serum prepared from Type II organisms has proven less efficient. Those for Type III and IV have been found to be clinically valueless up to date. Unfortunately clinical reports of organisms isolated in the various studies now available, lead us to believe that the pure Type I organisms are the specific cause in only a limited number of cases in young children, most of them fall into the Type IV group. For this reason the serum treatment of pneumonia has up to this time had only a limited place in the practice of pediatrics.

ANTISTREPTOCOCCIS (hemolyticus and viridans), ANTISTAPHYLOCOCCIC, and ANTIGONOCOCCIC ANTIBACTERIAL SERUMS

While these serums contain specific agglutinins, complement-fixing and other antibodies, their therapeutic action is variable and no definite prophecy can be made as to results because of the difference in reaction of the human organism to infection, the varying virulence of the multiple and various strains among these groups.

ANTIRHEUMATIC FEVER SERUM

There still remains a grave question as to streptococcus cardioarthritis being the specific cause of rheumatic fever. Personally I have had no experience with the use of this serum in pediatrics and believe it well to await further investigation as to its place among therapeutic measures available.

ANTIDYSENTERY SERUM

Polyvalent serums made by actively immunizing horses with the Flexner, Shiga and other strains of the dysentery bacillus are available for the treatment of bacillary dysentery. The literature contains very few reports on the use of this serum in childhood. Personally I have had no favorable experience with its use.

POLIOMYELITIS CONVALESCENT HUMAN SERUM

Convalescent human serum, first used rather extensively in New York City in the 1916 epidemic by Draper and Zingher and since then used very extensively, has until recently been accepted as an effective measure when administered in the pre-paralytic and early stages of paralysis.

The rationale for the use of convalescent serum in this disease appears to be sound: Recovery from an attack brings a life-long immunity; the serum from a recovered patient neutralizes infectious brain and cord in vitro; and it protects monkeys against what would otherwise be a fatal dose of such virus.

Aycock's analysis of the results of the Massachusetts cases of pre and early paralytic cases treated in 1927 and 1928 give us the first statistical report on the seeming benefits of this form of treatment. His later reports expressed some doubts as to the benefits expressed in his earlier communications.

Because of the nature of the disease, no control of alternate case study could be carried out until 1931 when New York City had an epidemic of such proportions that the supply of convalescent serum was inadequate for all cases. Consequently many cases diagnosed as pre-paralytic poliomyelitis went untreated. A report of the results appeared in the *Journal of the A. M. A.* The results led to the conclusion that untreated pre-paralytic cases have as high a rate of recovery as the treated cases and again opened the question of the value of convalescent serum therapy in this disease. The statistics were not made on alternate cases and there was a suggestion that many of the pre-paralytics who were permitted to go untreated were not as severely sick as those selected for treatment. In general the feeling is strong that convalescent serum therapy should be continued, especially in larger doses, and more careful, accurate control studies be conducted before any final verdict can be made.

Little attention has been paid to the use of normal immune serum. Investigation of pooled adult serum by Aycock and Luther, Schultz and Gebhardt, Shaughnessy and Hudson, and others has revealed that such pools, especially when made up of city-bred adults, is almost equal in virus neutralizing properties to convalescent serum. Since convalescent serum is so difficult to obtain in adequate quantities, serious consideration should be given to reinforcing this supply with pooled adult normal serum.

In passive immunization, Flexner and Stewart have advocated subcutaneous injection of 10 to 20 cc. of serum. Because of the low incidence of susceptibility, the value of such a procedure is difficult to evaluate.

In the presence of significant clinical and spinal fluid findings in the pre-paralytic and early stages, I believe the patient should have the benefit of human convalescent or human normal immune serum at least intramuscularly and intravenously or through intravenous transfusion from a properly selected donor.

I wish to emphasize the fact that many forces can influence one's judgment in the quoting of large groups of cases selected on a statistical basis such as the reports offered by Aycock and Parks. Early in this paper I made such a statement as concerns the treatment of tetany and in substantiation of my opinion as concerns my personal experience with poliomyelitis, wish briefly to quote the following case of a fulminating bulbar type of poliomyelitis. A boy, ten years of age, attended mass on Sunday morning, having complained of not feeling well the day previous. He was unable to rise from the kneeling position without support. He was taken home and put to bed. On Monday noon a physician was called and suspected the case as being one of the bulbar type. I saw the case with him at 5 p. m. at which time the child was unable to swallow, saliva running from his mouth and nose, respirations were rapid and his breathing was difficult, pulse 140, and the expression of the child was that of extreme anxiety. The case being in a very poor neighborhood and the neighbors having already gathered following the presence of a second physician's automobile driving up to the house, I suggested that the child be sent to the Municipal Contagious Disease Hospital as soon as possible with the prophecy that he would not live more than six or at the most twelve hours. Our serum center supplies this institution with pooled human convalescent serum and 60 cc. of this serum was administered intravenously at 8 p. m. Monday and repeated on Tuesday. Contrary to all expectations, the child was discharged from the hospital on the 21st day after admission. Insofar as one could tell his recovery was complete.

Within the past two months I have seen three cases in which the chief involvement was the soft palate and pharyngeal muscles. All were seen in the early stage of paralysis. In one of them there was also a left internal strabismus. The second one showed some involvement of the left thigh muscle. In all three instances serum was given as an intraspinal dose of 20 cc. and an intravenous dose of 60 cc. of human convalescent serum. To have watched these patients one by one was far more convincing than massive statistical reports could possibly show, even if one discounts the enthusiasm which must inevitably attend the pursuit of such a problem.

POLIOMYELITIS STREPTOCOCCUS SERUM

Rosenow prepared a horse serum from a streptococcus, considered the causal agent of this disease, and has used this serum intramuscularly and intravenously in doses of 5 to 100 cc. in therapy. Reports by Rosenow and his co-workers on use of this serum for a period of more than eight years through a series of epidemics has quoted uniformly favorable results, i.e. a lower mortality, less residual paralysis and prompt clinical response with disappearance of symptoms as compared with a control group of untreated cases. Other investigators report less favorable results.

Other goat and horse serums have been prepared by Petit, Schultz and Gebhardt, Weyer, Park and Banzhaf, Fairbrother and Morgan, Shaw et al and others, by gradually increasing inoculations into animals of suspensions of virus material. The serum obtained has demonstrated virus neutralizing properties when tested in monkeys. The serum produced in Park's laboratory revealed a much higher potency than convalescent serum. Clinical use has been reported as promising, but severe reactions have also occurred. This work is still very much in the experimental stage.

ANTIMEASLES SERUM

Many and varied have been the bacteria that have been described as being intimately associated with measles if not the cause of it. Attention, now, however, is almost entirely directed to the green diplococci first described by Tunnicliff and the more or less similar streptococcus of Ferry and Fisher.

Tunnicliff has succeeded in immunizing goats to the toxin of her diplococcus, as proved by careful laboratory experiments. In the hands of Hoyne, Gasul, and Halpern this immune goat serum has been found to prevent or modify measles in susceptible children exposed to the disease. A similar serum has been obtained from the horse by Tunnicliff and White. Further clinical trial is necessary before passing judgment on the prophylactic value of these products. There is no indication that they would be of any avail in treatment.

Degwitz believes that measles is caused by a filterable virus, often associated with a green-producing coccus. He claims to have cultivated this virus and with it has produced an immune serum from the sheep. This serum has been put to clinical trial but the reports are contrary.

In 1918 Nicolle and Conseil used convalescent serum in passive prophylaxis and since that time the use of such serum has become wide-spread, with a consistent success of either complete protection or modification of the disease in over 90% of the cases. The dose is 3 cc. for infants, increased to 10 cc. for older children. Usually, when given within 4 days after exposure, an attenuated disease is likely to follow. After this period no modification of the measles can be expected even when larger doses are given. It is advisable to secure complete protection in children under 3 years of age and in sick or malnourished children; but in older and healthy children measles attenuated by serum administration is desirable for the latter produces a permanent immunity whereas in those completely protected, the immunity is of short duration. In 287 measles contacts treated with measles convalescent serum from the Samuel Deutsch Serum Center, complete protection was secured in 60% and attenuated measles appeared in 33%. Of those contacts in which the serum failed to protect, many were given an insufficient dose or received the serum administration too late in the incubation period.

Pooled adult serum has also been used in doses of 20-40 cc., depending on the size of the patient, with quite satisfactory results. Whole parental blood in quantities of 30 cc. or more given intramuscularly soon after exposure will also modify the course of measles in the great majority of instances.

CHICKEN-POX CONVALESCENT SERUM

There are a number of reports showing that when convalescent serum was given in 5-10 cc. doses within the first 2 days after exposure to chicken-pox, the serum has proved quite effective in producing complete protection. Our serum center reports show complete protection has been secured in over 90% of exposed cases. Gordon and Meader reported 92.7% complete protection.

MUMPS CONVALESCENT SERUM

Alfred F. Hess, Barenberg and Ostroff found that 6-12 cc. of whole blood from convalescent patients when injected before the seventh day after exposure, was highly protective. Smaller amounts, 2-4 cc., of serum injected before the seventh day after exposure are reported by Regan as giving excellent results, only one of 70 developing the disease. Skrotsky employed 5-15 cc. Delavergne and Florentine feel that injection of serum in 20 cc. amounts soon after the appearance of the parotitis exerts an ameliorating effect on the course of the illness and the frequency of complications.

PERTUSSIS CONVALESCENT SERUM

Debre using pertussis convalescent serum in 3 cc. doses reports that if given early in the incubation period it produces complete protection; if administered towards the end of the incubation period a mild illness follows; but if given during the invasive period it will not influence the disease. Gillot reports similar findings. There are but few reports on the therapeutic use of pertussis convalescent serum. Battley feels that in 20 cc. doses the serum causes marked improvement, while Lesne and Petot are convinced that although there is no effect on the number or intensity of the paroxysms, the serum exerts a markedly beneficial effect on pertussis bronchopneumonia.

CONCLUSION

We see from our review that serum therapy, highly satisfactory in some diseases is unsatisfactory in others; that it may be highly effective in prophylaxis but discouraging in therapy. Although there is no gainsaying the value of statistical analysis in establishing the efficacy of therapy, such means should not be the only criterion in arriving at a conclusion. Clinical observations in individual cases is a guide that should not be disregarded. In many conditions where mass statistics show questionable results, individual observation of cases point to the contrary. Serum therapy is still in its developmental stage. Refinement and concentration of serum, more complete knowledge of the disease, of types, and of similarities and dissimilarities of the different strains of organisms will undoubtedly lead to even more satisfactory results. The development and success of serum therapy during the short time it has been in use, gives promise of further success in the future.

SOME COMMONLY MISUNDERSTOOD FEATURES ABOUT CUTANEOUS CANCER*

FRED D. WEIDMAN, M. D.,
Philadelphia, Pennsylvania.

Even to medical men with vision like yourselves I feel no hesitation in implying that you are not fully familiar with all of the vagaries of cancer as it affects the skin. I assure you that I should not feel that way if I were to address you as a pathologist and presume to inform you about, say, carcinoma of the breast. But most of you, I know, have a different sense of confidence as you approach a dermatologic subject than when approaching ones in obstetrics, pediatrics, surgery and so forth. It is a matter of common knowledge that for the average physician the dermatologic field is a thing apart—beginning when he was in medical college and the galaxy of complicated dermatologic terms baffled an already overworked student and was all that was needed to finally lead him to slight what is even today a minor subject in our crowded medical curriculum.

To be sure, this sense of strangeness of the dermatological field is less acute in respect to cancer than to dermatitis herpetiformis, erythema multiforme, lupus erythematosus, and the like. Still, there remains, not alone in the mind of the general practitioner, but even of the expert dermatologist, the knowledge that the broad generalities which have been postulated for carcinomas of the internal organs do not unerringly hold good for the skin. I well recall prior to the advent of 500,000 volt x-ray apparatus and radium bombs the properly grounded skepticism as to the efficacy of irradiation in the treatment of cancer, by and large. Naturally the surgeon was particularly rabid against the claims made for it. Yet, as far back as fifteen or twenty years the value of x-ray had been thoroughly established among dermatologists in the treatment of at least basal cell cancer. In short, for them there was no question as to the value of x-ray in the dermatologic field irrespective of what its real value was for cancer elsewhere. Even in the last year an excellent pathologist, a close friend of mine, voiced skepticism about the cure of cancer of the skin by irradiation and on further discussion I found out that the cases which came to his attention were only the more occasional ones where irradiation had failed. He was not acquainted with the numerous "cured" cases, for naturally the practicing dermatologist, once the patient had been cured, would not have occasion to call the pathologist's attention to these. In other words he did not have the proper perspective of the whole situation such as is necessary to appraise the efficacy of x-ray therapy. For various reasons, then, I feel justified in calling your attention first to some of the respects in which the term cancer has become incorrectly applied to the skin; second, to borderline dermatological states frequently known as pre-cancerous dermatoses; third, certain points in the diagnosis, both clinical and histologic, of cutaneous cancer; and, fourth, some scattered notes as to the treatment of cutaneous cancer.

PRELIMINARY CONSIDERATIONS

Before proceeding to a systematic discussion of the subject matter which falls under each of these four headings, it may be well to inquire into certain special properties, more or less peculiarities, which the skin may possess and which will have a bearing from time to time upon the several phases of cancer which will be discussed later, more or less, in all four of the above topics: that is, to generalize—to make a brief survey of certain special phases of the biology of the skin which may serve to explain what would otherwise go by default.

---

*From the Laboratory of Dermatological Research, University of Pennsylvania, Philadelphia. Presented before the Omaha-Midwest Clinics, Nov.-Dec., 1933.

Pseudoepitheliomatous hyperplasia. This is of particular interest to the histopathologist, because it may mimic cancer. To begin with, the skin is preeminently an organ of protection. We can envisage in it a structure which, through the ages has been subjected to stress, strain, and trauma, insults of a degree that are not brought to bear upon any other organ. All things considered, regeneration of cutaneous defects, when one stops to think about it, proceeds in a remarkably efficient way; incidentally, it is justifiable to speculate whether this property has been acquired largely as an adaptation to environment, i. e., developed phylogenetically. Viewed in another way, the threshhold of response of the epiderm is much lower than that of epithelium in many other parts of the body.

Coming next to the practical application of this thought, we may observe such extreme hyperplasias of epithelial cells that the interpapillary pegs may grow sufficiently irregularly into the corium as to mimic epithelioma. Such, designated pseudo-epitheliomatous hyperplasia, may be met in the margins of ulcers of tuberculosis, syphilis, blastomycosis, and other long-continued subacute irritative states. Let us then understand that we have in the skin a surface epithelium that is singularly, and sometimes outlandishly responsive to a variety of different subacute irritative or at least stimulative agents other than those of cancer.

Naevi. The only phase of naevic processes that is appropriate for discussion at this time depends upon the fact that epidermal cells are not the only ones that are liable to naevic abnormalities. The sudoriferous and to a lesser extent the sebaceous glands also participate. Since such naevic states are by definition abnormalities of a congenital nature, it follows that not alone will the conformation of naevic structures be irregular, but that their individual cells will also have more or less embryonal characters. This means, at once, that their biology is that of embryonal tissue and that therefore they are liable to a genuine carcinomatous transformation provided such embryonalness becomes sufficiently exaggerated. Ergo, even when non-cancerous, since such cells also have the morphology of embryonal cells, the way is open to interpet them histologically as neoplastic—even carcinomatous. The lesson taught from these circumstances is that whenever it is known *a priori* (symptomatology) that the lesion in question is a naevus, allowance must be made (indeed they should be expected) for embryonal characters—even the pseudo-permeative effects in their deepest parts which are innate in naevi in general. Such embryonalness must not be interpreted as evidence of malignancy. Likewise, the same caution must be exercised in interpreting the significance of the irregular configurations which hair follicles and sweat glands may assume when congenitally obnormal (naevi).

To summarize, then, we have in the skin two outstanding peculiarities, both of which, particularly histologically but also carrying over clinically, lead to confusion in our understanding of cutaneous cancer and its accurate diagnosis; first, a capacity for pseudo-epitheliomatous hyperplasia; and, second, an approach on the part of naevi (epidermal, hair follicle, and sudorific) to carcinomatous effects.

FALLACIOUS CANCER

After these preliminary considerations let us take up the first of the four major topics listed above, namely that of pseudo-cancer or fallacious cancer of the skin. The first condition falling under this heading is not difficult to dispose of—in fact I feel guilty of setting up a straw man who is very easy to bowl over. Epithelioma contagiosum is a term which is still with us but which should be replaced by "molluscum contagiosum." It is true that the individual lesions may resemble clinically those of cutaneous cancer in a superficial way, and that to the untrained microscopist there is a semblance of invasiveness on the part of the hyperplastic epidermal cells which has led to the erroneous diagnosis of basal cell cancer. Actually there is nothing carcinomatous about this lesion. It does not destroy tissue locally, is not truly invasive, and does not metastasize.

But in another dermatosis, namely multiple benign cystic epithelioma we have a much more complicated situation because the individual lesion may resemble carcinoma both clinically and histologically. It is only upon rare occasions, however, that the lesions become definitely invasive and can be regarded as carcinomatous in the full, true, biologic sense. This is particularly true of the sudoriferous members (syringoma, syringoadenomas) of the general "benign cystic epithelioma" group. The situation here is analagous to that of the well-known carcinoids of the appendix and intestines which are histologically malignant but biologically benign. Indeed, it is only from the thoroughly established knowledge that we have of the benign clinical course of this dermatosis that we are enabled to separate it from the true cancers of the skin.

Under this heading, too, the pseudo-epitheliomatous hyperplasia which has been already sufficiently discussed would fall. For the clinician, it has significance only through the microscopic diagnosis which might be returned by the pathologist from biopsy material.

PRECANCEROUS DERMATOSES

There is an enormous dermatological literature on this subject; hence I can barely touch upon it at this time. It is common knowledge that old chronic ulcers, whether specific (tuberculosis, syphilis, and so forth) or non-specific (burns) may eventually exhibit carcinomatous changes in their margins. Probably this tendency may be explained on the basis of the circumstances above outlined in connection with pseudo-epitheliomatous hyperplasia. Some of the naevi are also notoriously liable to secondary carcinomatous changes; it is not difficult to reconcile the biology of carcinomatous tissue with that of an embryological structure like the naevus. In the senile keratoses we again have a precancerous dermatosis in which an abnormal growth metabolism is inaugurated in connection with excessive actinic light. Indeed, the not uncommon occurrence of cutaneous cancer in pre-existing skin lesions (precancerous dermatoses) may be referred largely to the peculiarities in cutaneous biology discussed in the "preliminary considerations."

DIAGNOSIS

I shall not presume to outline to you the entire subject of diagnosis and differential diagnosis of cutaneous cancer. That would be an imposition. The general practitioner is fully qualified to diagnose the typical cases such as occur on the face and back of hands of elderly people, particularly those exposed to rigors of climate and weather. There is, however, a goodly residue of atypical cases which require the attention of the expert dermatologist and which may baffle even him. Perhaps the most useful single criterion, if I may for the sake of simplicity confine myself to a single one, is a translucent, pearly quality at the margin of the lesion, together with the presence of telangiectases ramifying over it. The pocket lens may be necessary to bring out the latter feature. This item is particularly useful in the earlier stages of the lesion.

To biopsy or not to biopsy. The histologic examination is of paramount importance in doubtful cases. For some time there has been opposition to the performance of biopsies on the basis that cancer cells are loosened up incidental to the traumatism, and become available for metastasis. However this may be with mammary and lip and perhaps other cancers, it seldom happens in dermatologic practice. This is particularly true if the coagulating current is employed in excising the material. I was influenced many years ago in my decision to adopt biopsies, by the experiments of Francis Carter Wood. In a paper read before the Philadelphia Pathological Society he told how he had performed biopsies upon experimental rat carcinomas and that metastasis did not develop in them any more than they did in the control series of rats which had not been subjected to biopsy.

Furthermore, the value of biopsy lies not alone in its immediate diagnostic value but in the appraisal of therapeutic results. Time and time again unexpectly brilliant results are achieved by radium therapy in which, on review of the entire situation from beginning to end, the unequivocalness of the original diagnosis has been called in question. In such cases the availability of the original histologic section may be a sine qua non for a final conclusion as to the significance of the therapeutic success which was claimed. I have no hesitation in commending the practice adopted at the American Oncologic hospital in Philadelphia, where biopsies are routinely performed even where the diagnosis of cancer appears to be beyond question.

At this point permit me to indicate certain precautions which should be observed if biopsies are to yield their fullest value. It often happens that the biopsy has given no useful information, even where clinically the diagnosis was certainly cancer. As a matter of fact most such mistakes are due not to the histologic section itself, but the methods employed in securing the sample. The point is that the biopsy has not been treated quite fairly. In the first place a sufficiently large amount of material should be excised in order that it may be representative of *the entire disease process*. Obviously, portions covered by granulation tissue, slough, and necrotic parts will not carry any constructive message. The attempt should be made to include those portions which are the more actively invasive, i.e., *at the margins of the lesions*. Some of the surrounding normal skin should be included in the material excised. In the second place, the incision should be carried deep enough to include the subcutaneous tissue; otherwise it may not be possible to decide in the histologic sections whether invasion and permeation is taking place. Certainly it is insufficient to simply shave off the projecting, surface parts of the lesion and expect the best results. Finally, in those cases where the amount of material available is small, some means should be employed to identify which part of the specimen represented the surface of the tumor, in order to properly orient the specimen during histologic embedding. Thus, by the time the specimen reaches the pathologist it has become bleached by fixative and the surface may not be identifiable. If improperly oriented when the sections are cut, the plane of section may pass in such an irregular or inappropriate way through the material that the diagnosis cannot be made. In short, as in all other medical activities, the closest personal cooperation between the clinician and the pathologist is necessary if the best results are to be expected. Do not regard the pathologist simply as a technician, but as a specialist—even in such a trifling matter as the performance of a biopsy.

TREATMENT AND PROGNOSIS

At this time I shall only refer to certain phases in the treatment of cancer which are not commonly recorded in the data usually included under this heading in standard texts.

First, as to the melanomas. For a long time the question has been with us whether to operate or not to operate, and the consensus is that such lesions should not be touched. In fact they have been included among the *noli me tangere*. Recently, however, certain workers at Bloch's clinic have analyzed the results of treatment in a rather large series and have concluded that the situation is not quite as bad as commonly thought. Whereas the situation remains "as is" in respect to the efficacy of radiation in this class of tumors, it would appear from their report that at times surgery, particularly electro coagulation, has been of benefit. The prognosis is far better for facial lesions than those of the extremities.

A practical point in differential diagnosis for the pathologist is the distinction between such melanotic cancers and what may be called "pigmented cancer." I need not elaborate on the histology of melanotic cancers. On the other hand, however, more or less melanin in a finely granular form may occasionally be found in what otherwise are ordinary basal cell cancers of the Krompecher type. The point I wish to make is that the presence of such pigment under these circumstances does not modify the more favorable prognosis which can be advanced for basal cell cancers.

The next item to which I should call your attention is the role that the precise anatomical location of basal cell carcinoma of the face may play. Thus, when basal cell cancers occur near the cartilage of the nose or of the ear and there is possibility of invasion, a much more guarded prognosis should be given. It appears that when cancer cells infiltrate cartilage they are much more resistant to radiation.

Cancers located near the eyes must always be regarded in the light of the scars which remain even though the neoplastic elements be entirely eradicated. The probability of ectropion is obvious. Care should be taken in such cases to estimate whether the scar will be the more contractile and deforming as induced by radiation or by electrocoagulation.

Finally, may I repeat what I stated at the beginning of this communication; namely, that whatever the feeling may be as to the efficacy of radiation in visceral cancer, its value in cutaneous cancer is undoubted. Indeed I feel that I may safely estimate that under proper treatment with either radium or the X-ray, 95 percent or more of the basal cell carcinomas of the face may be completely cured. Indeed I have seen certain lesions completely cured by electrocoagulation, without x-ray or radium.

NEUROLOGY AND GENERAL MEDICINE*

LEWIS J. POLLOCK, M. D.,
Chicago, Illinois

It is customary to regard neurology as a branch of medicine dealing with obscure, often incurable, chronic diseases. The neurologist is considered to be a physician whose chief qualification is an obfuscating vocabulary. His patients are persons suffering from imaginary ills, are insane, or helpless.

We have become accustomed to think about the functions of respiration, circulation, secretion, excretion, digestion, growth, metabolism and reproduction. We think of these functions in terms of their efficiency and deficiency, but we often stop short of determining the causes and mechanisms of these functions and dysfunctions.

Not a single breath can be taken, a step made, in fact with the exception of a very few primitive muscular and secretory functions lasting but a few hours, no function in the body is possible without a nervous system.

---

*Presented before the 1933 sessions of the Omaha Mid-West Clinical Society, October 29-November 2, 1933.

Neurology cannot remain an isolated branch of medicine practiced by a few specialists. It is one of the most important parts of medicine and unknowingly perhaps, gropingly, is practiced by us all. It is intimately related to the mechanisms of all diseases. Disease of the nervous system produces dysfunction of all other parts of the body and disease of the body affects the function of the nervous system.

When we consider some of the disturbances of function following encephalitis lethargica or sleeping sickness we realize how defective is our knowledge of the autonomic nervous system and we are impressed with its importance and the indications for its study not only by neurologists but by all physicians. To note a few of the disturbances, mention may be made of the disturbances of sleep, of somnolence, of insomnia, of reversal of the time of sleeping, of disturbance in temperature regulation, of some cases with marked lowering of temperature, at times with slow pulse, of marked disturbances of respiration, forced, rapid and so continued as to be followed by tetany, of disturbances of sweating, seborrhea, of increased salivation, of disturbed water metabolism with polyuria, polydipsia, at times disturbances of sugar metabolism, of marked adiposity, menstrual disturbances, amenorrhea, of muscular weakness not due to interruption of regulating motor mechanisms but similar to myasthenia. Where pluriglandular function begins or neural mechanisms end is unknown and we shall be compelled to search far to understand these functions and their disorders so that a logical therapy be developed.

Of lesser fundamental importance but of greater immediate utility is the knowledge of the predisposing factor of certain bodily diseases to disease of the nervous system.

Of these infectious diseases are paramount. Encephalitis in children—leading to mental deficiency, cerebral palsies and epilepsy is not an uncommon complication of the exanthemata as measles, scarlet fever and of whooping cough. Meningitis likewise occurs more frequently as the result of tuberculosis, pneumonia and influenza but in other infections as well. Venous sinus thrombosis of the pyogenic variety often results from general septicemia, often in the puerperium, and as the result of adjacent pathology in sinuses and mastoids. In similar conditions brain abscess and meningitis may occur. Non-pyogenic venous sinus thrombosis occurs as the result of wasting diseases, nutritional disease and cachexia. Hemiplegia due to cerebral arterial hemorrhage, thrombosis or embolism is dependent upon underlying disease for its cause. Cardiovascular-renal disease, producing hemorrhage; syphilis and arterial disease, thrombosis and endocarditis, septicemia, bronchiectasis and thrombophlebitis, often in the puerperium, producing embolism. Diseases of the blood as polycythemia are often the cause of cerebral hemorrhage, thrombosis and of chorea. Chorea is caused by endocarditis, rheumatic fever syndrome, and perhaps in part by pregnancy.

Degeneration of the spinal cord, as in combined degeneration of the spinal cord, is most frequently caused by primary anemia. Often the blood picture is normal but an achlorhydria is constant. Dietary deficiency diseases, as pellagra, likewise produce degeneration of the spinal cord and lesions in the spinal cord and peripheral nerves are seen in diabetes. In Leukemia infiltration of the cord and brain occur and of course metastases may occur from any malignant tumor. The peripheral nerves are often affected in the form of multiple neuritis, in diphtheria, less frequently in other infectious diseases, in diabetes and dietary deficiency diseases, not only in beriberi. The puerperium is especially marked for their occurrence.

The importance of recognizing cerebral involvement in toxic and infectious diseases is emphasized by the frequency of cerebral edema and meningismus in all severe infections. Acute confusional and stuporous states are common. Delirium frequently occurs and evanescent hemiplegias, and visual disturbances are frequently observed in uremia and eclamptic conditions. Often the underlying pathology of a state of delirium or confusion is unrecognized. I particularly stress the necessity of physicians knowing how adequately to deal with these acute mental disturbances and recognize with humility the inefficiency of our teaching of this subject in the universities. It is unnecessary to dilate further upon this phase of the subject.

Of greatest practical importance is the recognition of signs and symptoms occurring alike in diseases of the nervous system and of other bodily structures and their interpretation. To some of the differential points the greater part of this paper will be devoted.

Coma occurs often as the result of certain bodily diseases, as uremia, eclampsia, diabetes and terminal states, and in cerebral disease, meningitis, encephalitis, hemorrhage, thrombosis, embolism, abscess, sinus thrombosis, and brain tumor. I would direct your attention to only one feature in the differential diagnosis, namely, hemiplegia. Although it is true that hemiplegia may be present in eclampsia and uremia the other evidences of these diseases often suffice to diagnose them. Otherwise the existence of a hemiplegia calls attention to the existence of brain pathology. The coma may be so deep that hemiplegia may easily be unrecognized unless carefully sought for. Usually the coma is not so deep but that pricking the face with a pin will produce some grimacing and then the one side will be seen to contract more efficaciously than the other. If the lids are open they are further open on the paretic side. The nasolabial fold is more shallow and at times puffing of the paretic cheek is seen in expiration. When the arm is passively lifted the forearm extended and so placed that when it is allowed to fall it would fall upon the face, unless the coma is unusually deep the forearm is stopped in its fall by a voluntary contraction. It usually falls slower, and at times may be held extended. If paralyzed it falls quickly without interruption. When the lower extremity is passively flexed at the knee and hip and released on the paralyzed side it falls into external rotation and slides into extention. On the normal side it is often held in the midline for a time or slowly extended. When the foot is passively dorsal flexed, on the normal side a contraction occurs in the tibialis anticus. Even in the comatose state the deep reflexes may be increased on the paralyzed side, great care being exercised to compare the responses of the two sides, and often the abdominal, cremasteric and plantar reflexes are absent on that side. When the abdominal wall or chest wall is pricked with a pin the patient if able will only reach toward the spot with the normal hand. It is very important to remember that when the soles are pricked that movement of the leg does not mean that paralysis is not present, as this often is a reflex and leads frequently to a wrong diagnosis.

Convulsions occur in idiopathic epilepsy, in gross disease of the brain and as the result of intoxication in metabolic, toxic, and infectious diseases. Very careful inquiry into the history is essential in making a differential diagnosis. Often it will be found that preceding attacks occurred, even years ago. Of particular importance are the occurrences of little attacks. Often these are of such short duration and mildness that their significance as petit mal attacks is overlooked. They may consist of flashes of apprehension, tightness in the throat, a lump in the throat, a gone feeling, a dizziness, a sense of dreaming, a hesitation in speech, a momentary cessation of activity. Often they produce so little disturbance that the patient attributes but little importance to them. At times they occur more frequenly, just before or at meal time. Fortunately, most of them are of longer duration and are associated with changes in color, slight salivation, widening of the eyes and staring, so that others note the attacks.

Rarely one observes attacks of sudden, lightning-like movements of the shoulders and arms, as if shrugging and flinging the arms upward. This is an epilepsy. Occasionally terror-like attacks occur in which the patient may run to the mother, cling to her a few moments and then shamefacedly continue its activity.

Frequent stumbling without reason often calls attention to attacks and in one form of attack (cataplexy) a sudden loss of all muscular tone occurs with the patient dropping down, immediately arising. Usually the attack is brought on by an emotion of risibility, surprise or pleasure. Attacks of occurrence of an unpleasant odor or taste without any other convulsive disturbance may be the precursor of uncinate gyrus atttacks. On the other hand, it is necessary to differentiate from a convulsion, muscular twitching and tremors.

Pain is one of the commonest symptoms of all disease. Headache, often a prominent symptom of intracranial disease, must be carefully studied as it is often present in other diseases and in functional states, as the neuroses. In the latter it is never a pain. Although it is described as excruciating, terrible, unbearable, it is always a sensation and never a pain. It is a tightness, a fulness, a throbbing, a trickling, a pressure, a bursting feeling. It is always made worse by mental effort and emotional disturbance. If it were to occur in the foot the patient will always say it would not bother him. On the other hand, the pain of intracranial disease is a real pain. In brain tumor it is very severe, throbbing, bursting, and occurs often in attacks associated with vomiting. It is worse on coughing, sneezing and straining. Frequently it may be brought on and at times stopped by change of position of the head. In cerebellar disease it is frequently suboccipital and associated with a rigid neck. It occurs at any time of the day and unlike that of sinus disease, is not affected by weather. Neither, as in indurative headache, is there tenderness of the scalp except in subtentorial lesions.

Pains in the arms and thighs and legs are usually called neuritic and the disease often diagnosed as neuritis. A mononeuritis is so rare that I have not observed a single case in ten years which was not the result of some underlying pathology giving rise to referred pain. Usually there is no paralysis or paresis, no loss of sensation and no change in the response of the muscles to electrical stimuli. When a neuritis is present some loss of function must occur. Usually in the upper extremity the pain is the result of an arthritis of the shoulder or of the cervical spine, of a cervical rib, a subacromial bursitis. Limitation of motion of the shoulder joint will usually be found and when a subacromial bursitis is present the patient, although unable to abduct the arm, will be able to allow the arm to fall into an abducted position while stooping over. At times it may be difficult to determine if the deltoid muscle is paralyzed but if it be palpated while the patient strongly approximates the arm to the chest wall the deltoid will be felt to relax.

In the lower extremity in such a case with a diagnosis of sciatica or sciatic neuritis the Achilles jerk will be found absent, testifying here to some organic involvement of the sciatic nerve. However, usually it will be found that there is an osteo-arthritis of the spine and some movements of the spine will be limited. Unfortunately, such movements as put the sciatic nerve on the stretch also move the spine. Sacro-iliac disease and disease of the hip joint likewise produce pains in the distribution of the sciatic nerve. In the latter external rotation of the thigh with the leg flexed is markedly limited and painful.

To bilateral sciatica special attention must be paid as it is not infrequently the sign of a lesion of the cauda equina. The Achilles jerks will usually be absent and anesthesia be found over the buttocks and sacral region, and the spinal fluid is often yellow or rich in albumen and globulin. The pains are radiating, burning, excruciating and always worse at night.

Neuralgia is likewise a favorite diagnosis in the presence of pain. I know of very few kinds of neuralgia, two principal ones, affecting the distribution of the trifacial nerve (trifacial and glossopharyngeal) and one controversial one affecting the pudendal region. A neuralgic pain is quite typical and no error in diagnosis should ever be made. It is always paroxysmal, of very short duration, seconds, not minutes, and is brought on by touching some trigger zone or area. Thus, in trifacial neuralgia pain is produced by touching the face, talking, chewing, and swallowing. The face is not tender, but when it is touched an explosion of pain occurs. A pain of long duration is probably not a neuralgia and when the patient willingly puts his fingers on the part from which pain occurs it is not neuralgia.

Occasionally it occurs that patients may be operated upon time and again for gallbladder disease, appendicitis, etc., when the pain is the result of neurologic disease. Of these mention should be made of the root pains of a spinal cord tumor. The pains are sharp, shooting, lancinating, always occurring in a similar segment of the skin, at times brought on by coughing, sneezing, straining, bending the head forward. When carefully examined such a patient will always be found to have changes in reflex activity, usually difference of deep reflexes, increased on the affected side and diminished superficial reflexes, and some change in sensation. Here it is well to remember that when a partial compression of the cord occurs it is on the opposite leg that diminution or loss of pain and temperature senses occurs. Many times when the blisters are of little moment a case of shingles or herpes zoster has been diagnosed as a pleurisy or pneumonia.

The crises of tabes dorsalis have often led to a faulty diagnosis. Particularly is this true of gastric crisis, renal, bladder and intestinal crises. In these crises, the signs of tabes may always be found if carefully sought for. There may only be absence of the achilles reflexes, with testicular analgesia, or unequal pupils, at times Argyle Robertson pupils. At times loss of some form of deep sensibility, and there will be no signs of any bodily disease which could produce the pain complained of. That is, there will be no signs of gastric ulcer, of disease of the gallbladder or kidney, only pain, often vomiting and diarrhea, or frequent urination with strangury, but no x-ray evidence of disease, no blood in the urine, no change in gastric contents between attacks, no change in gall-bladder activity. The attacks are prolonged, not affected by time of eating nor relieved by them; when affecting the stomach, associated with unusual increase of secretion.

Weakness, often the outcome of disease of the upper and lower motor neurons, may occur in diseases of other organs. At times it imitates that due to disease of the nervous system. Many times a diagnosis of infantile paralysis has been made during an epidemic in children suffering from rickets and scurvy producing a pseudoparalysis, and it is important to note that the failure of movement because of pain is not a paralysis. Not infrequently an arm or a leg has been said to be paralyzed when it only was not moved because of pain, often as a result of tuberculosis, particularly of the hip.

In arteriosclerotic vessels or thrombo-angiitic obliteration an intermittent halt or claudication occurs in which the patient after walking a short distance finds it less and less possible to move the legs and finally must rest for a time, and again resume as before. In this connection easy fatigability is a prominent sign of myasthenia gravis but usually the occular muscles and those of mastication are easily affected. The opposite condition of partial inability to move at the beginning with increasingly easy function with repeated movements is seen in the condition known as myotonia. The characteristic position of the hands and feet in carpopedal spasm occurring in spasmophilia and tetany, as well as the increased irritability of nerves and muscles should differentiate this from any paralysis.

In a general examination certain signs and symptoms are found which at times point to a possible neurologic disease. In the head one may mention inequality of the pupils. One should always remember that an involvement of the cervical sympathetic produces a narrow pupil on that side. At times it is associated with a narrow palpebral fissure, at times with absence of sweating on that side of the face. Often such a condition is produced by cervical adenopathy and has resulted from apical pleurisy.

Failure of convergence of the eyeballs may be the result of a difference in the near point of vision of the two eyes and when this point in one eye is reached it, being useless, may swing outward.

Defects in vision are of greatest importance in indicating disease of the nervous system and every one should be familiar with the use of the ophthalmoscope, and to be able to determine for himself the presence of optic neuritis, optic atrophy and choked disc. Very frequently, when vision is becoming defective, early recognition of a visual field defect may lead to an early diagnosis of a pituitary adenoma or of a brain tumor. Once I saw a patient who was comatose, had a marked choked disc, and it was possible sufficiently to arouse him to see that he had a homonymous hemianopia. The tumor, localized in the occipital lobe, had grown to a size which precluded its removal. Two years before that the patient, who was a butcher, complained that he was unable to weigh meat on scales which indicated the weight by an arrow pointing about an axis. He always lost the arrow as it circumscribed the disc. At the same time he began to bump into objects to the right. Being examined for glasses, his central vision was found normal. Had even a gross test been performed the hemianopia would have been recognized.

Sudden blindness without change in the media or retinia and nerve head, characteristic of retrobulbar neuritis, is very often the first indication of a multiple sclerosis. Usually it is evanescent and if a sinus operation be performed or an osteopathic adjustment made before vision spontaneously returns the miracle is attributed to the procedure.

Weakness in mastication is often the first sign of a myasthenia gravis.

Difficulty in swallowing liquids or solids should receive careful attention. The former is frequently the result of palatal palsy, as in postdiphtheritic paralysis. Both occur in bulbar palsy and are associated with dysarthria and atrophy of the tongue. They also are present in pseudobulbar palsy resulting from bilateral lesions of the brain at times producing trivial strokes.

When acute they may be the result of a thrombosis of one of the arteries of the brain stem.

A rigid neck is a frequent accompaniment of meningismus and meningitis. In the former it often occurs that although complete anteflexion of the head is impossible or is painful and resisted, the first part of anteflexion through an angle of 20 degrees is unresisted, and if then the shoulders of the patient be raised the head may easily drop further back and be as easily anteflexed.

Rigid neck may result from other conditions. When my boy was two years old the family had taken him to Florida. One day I received a telegram saying that he had spinal meningitis. I put a lumbar puncture needle in my pocket and took the train. I arrived late at night and found that a spinal puncture had not been made. As I examined the child, who at this time had a hyperextended head, I noted marked enlargement of the cervical glands, and when I looked into his throat a bilateral acute tonsillitis was discovered, that sent me home with a wish for less laboratory work and more sense. The bane of the existence of some dentists is some old individuals who complain of discomfort, burning or other sensations in the gums and denture after denture is made without relief; allow me to call to your attention the frequency of melancholia in such cases and the discomfort of the mouth a somatic delusion. At times when the depression disappears so does the discomfort.

Dizziness is not vertigo. Many patients come to a neurologic clinic with purported vertigo who have peculiar sensations, floating, sinking, fainting, unsteadiness, blurring of vision, but no subjective or objective rotation.

The gastro-intestinal function is often disturbed in neurologic disease. Anorexia is a common symptom in melancholia. It is a prominent one in many of the neuroses. Frequently it is associated with a fear developed about a supposed high blood pressure, a gastric ulcer, a mucous colitis or whatnot. It develops by the gradual elimination of one after another article of diet until practically nothing is left. In one of my cases the only articles of diet the ingestion of which were felt not to be followed by dire consequences were prunes and lettuce.

Vomiting occurs in the organic diseases of the nervous system, chiefly in increased intracranial tension. It is particularly necessary to remember this in dealing with children. At times what has been considered cyclic vomiting and acidosis sequential motor disturbances. It also occurs as has been found to be the result of a midline cerebellar tumor which produced but few and incon- an accompaniment of gastric crisis of tabes.

In the neuroses it is often, again, the result of fear, usually fear of pressure against the heart and it is an educated faculty. It never occurs spontaneously at the beginning, always by voluntary eructation of food, then, frequently assisted by gagging with the finger, vomiting occurs. Often the command to keep the mouth wide open when vomiting threatens stops it.

Constipation, refusal to move the bowels and particularly a feeling of incompleteness of the movement of the bowels is often seen in the neuroses. Dejerine had a patient who, he computes, had taken 50,000 enemas. Frequent attempts to move the bowels likewise may be seen at times as the result of fear of soiling oneself. Diarrhea may occur in organic neurologic disease, as tabes, and commonly in the neuroses, often in the form of a mucous colitis. Of course, retention and incontinence of the stools is a constant accompaniment of disease of the spinal cord and when a slight incontinence has been attributed to hemorrhoids thought should be given to a possible disease of the spinal cord.

False cardiopaths or patients suffering from neuroses with symptoms referable to the heart constitute a considerable proportion of a neurologic practice. Numerous sensations in the region of the heart, feeling of oppression, of insufficient air, or apprehension, panic, with tachycardia, all are conducive to make the patient fearful to be alone, travel, go to public places, such as church, restaurants, and disable them as effectively as an organic disease. Unfortunately, failure to recognize the real condition, often by repeated examinations, and thoughtless statements aggravate and prolong the condition.

Slowness of pulse is often observed in increased intracranial pressure and involvement of the basilar meninges and during the former blood pressure rises. As a part of the process of hibernation seen in some cases of tumor of the pituitary a slow pulse, low temperature and blood pressure is observed.

From the respiratory side, paroxysms, forced respiration and hypernea are seen as sequelae of encephalitis lethargica. In one such case the patient in the midst of such an attack would choke herself until she lost consciousness and upon regaining consciousness the attack would have disappeared.

Somnolence, so often seen in vascular renal disease, is likewise a prominent symptom of brain tumors. It also is notable in dysfunction of the region about the pituitary gland, and attacks of irresistable sleep often occur as a narcolepsy or somnolepsy, some are the result of a preceding encephalitis, some have no discernible cause.

Derangement of the bladder function may be brought about from a lesion of any level of the spinal cord and from disease of the cauda equina. Among the diseases causing such lesions mention may be made of transverse lesions of the spinal cord as the result of compression by disease of the vertebrae, tumors, etc., and of myelitis; of diffuse diseases, as multiple sclerosis, disease of the posterior roots and columns as in tabes dorsalis, of syringomyelia, tumors of the cauda equina, root neuritis and spina bifida occulta.

When the defects of function of the nervous system are pronounced the cause of disturbance of bladder function may be apparent, but it not infrequently occurs that the earliest sign of some of these diseases is related to the function of the bladder. In diseases producing a transverse lesion above the level of the reflex arc of the bladder sphincter, difficulty in starting the urinary stream is noted and at times dribbling may appear. The function of the bladder is interfered with in almost every case of tabes dorsalis. At times in addition to difficulty in starting the stream there is a lessened desire to micturate for long periods of time. Incontinence is frequently observed, early in the disease limited to a small amount sometimes after voluntary urination. Attention should be drawn to the occurrence of crises in this disease. Clitoridean crises in the form of paroxysms of voluptuous sensations with vulvovaginal secretion have been noted. Renal crises with severe pain in the region of the bladder and kidneys eventually accompanied by dysuria may appear. At times lightning pains may have their seat in the bladder and perineum. Disagreeable sensations during urination, frequent and imperative desire to urinate are often observed. Difficulty in completely emptying the bladder with retention of residual urine is common.

In general, multiple neuritis is not associated with bladder disturbances but in a number of instances it has been known to occur.

Lesions of the cauda equina and spina bifida occulta may result in either retention or incontinence of urine.

Disturbances of menstruation, irregularity, infrequency and cessation, are often among the first signs of diseases of the pituitary gland and its environs, occurring with sufficient frequency to merit careful consideration. Polyuria is likewise frequently present.

In the neuroses polyuria, pollakiuria, at times incontinence and at times retention of urine may be present. Vesical and ureteral pain or, more frequently, discomfort or unpleasant sensations associated with excessive hyperesthesia occur. Vaginismus and contraction of the adductors may occur alone or combined. These may be complicated by the addition of urinary phenomena, increased micturition, pain in the bladder and genital algias, frequently localized in the vagina.

It is well known that anxiety, fright and shock often produce cessation of menstruation. In many of the psychoses menstruation may cease or become irregular and scanty. On the other hand, there is a relationship between menstruation and some of the manifestations of neurologic disease. Seizures of epilepsy often occur more frequently or alone about the time of menstruation and at times the first seizure is noted at or about the time of the first menstrual period. It may be said, however, that a careful search into the history of the patient frequently reveals the occurrence of attacks which may have been instances of petit mal or even epileptiform seizures in infancy, in association with diseases affecting the brain or of birth injury.

Migraine often occurs at or about the first menstrual period; the attacks frequently occur about succeeding periods and the disease often disappears at the menopause.

The inseparability of neurology from medicine can be seen even in this disjointed, superficial and rambling review. While I call myself a neurologist, I am a physician and while you are called physicians you are neurologists.

THE EFFECTS OF PREGNANCY AND DISEASE UPON EACH OTHER*

HUGO EHRENFEST, M. D.,
Washington University,
St. Louis.

Interrelations between pregnancy and disease are manifold and complex. They are of great theoretic interest to the scientist insofar as the physiology of pregnancy throws much light on the origin of disease, and they are of eminent practical importance to the physician who very often has to deal with difficult problems evolving from a complication of pregnancy with disease. That this is an undeniable fact must have become clear to all of you who attended the clinical demonstration of such cases this afternoon.

The practical aspects of the problem, in my belief, can be easier discussed by alluding first to theoretical considerations of pregnancy as a possible cause of disease. We know that a perfectly well woman, when becoming pregnant, is likely to exhibit certain complaints or symptoms which in the nonpregnant individual would be indicative of disease. I have in mind such symptoms, very common in the first trimester of pregnancy, as anorexia, nausea, vomiting, urinary frequency, nervous or emotional manifestations, and such conditions, more common in later pregnancy, as palpitations, a certain degree of dyspnea especially on exertion, or edema, particularly in lower extremity, even of the face. However, as compared with the same or similar symptoms in man or nonpregnant woman we must recognize two noteworthy differences. The first is, that in the overwhelming number of instances they disappear promptly and usually completely approximately at the end of the first trimester or with termination of pregnancy. The second difference is, that after their disappearance and especially after labor, the general condition of the woman as a rule seems improved. Usually, the normal healthy woman comes out of pregnancy with an increase in weight, and this general physical improvement often is particularly noticeable in the formerly healthy but underdeveloped and frail girl. She has an excellent chance to come out of pregnancy with marked amelioration in her general health. However, there remains a small percentage of healthy or apparently healthy women who after termination of pregnancy show that they evidently have been harmed by the process, that they now are suffering from diseases especially of kidneys, heart or lungs.

---

*Presented before the Omaha-Mid-West Clinics, Omaha, Nov. 21, 1933.

We know that the process of reproduction represents the maximum of physiologic function of woman. Pregnancy demands increased activity on the part of every organ or organ system, almost invariably expressed in definite anatomic or functional changes of these organs. When all the organs are able to respond adequately to these increased demands, harmonious interaction between them will be preserved. The woman will have the feeling of being well, and a state of health is maintained—in spite of all the profound anatomic and functional alterations that have developed under the influence of pregnancy. We must recognize the fact that the total of phenomena comprised in what we call the physiology of pregnancy is essentially different from the physiologic state of the woman before she conceived. Much confusion is caused in medical literature by the still prevalent attempt to evolve a conception of the pathology of pregnancy by comparison with conditions normally seen in nonpregnant women. An adequate idea of gestational pathology obviously can be based only on familiarity with the "physiology" of pregnancy and it can be asserted that in spite of intense studies our information in this respect is still somewhat deficient.

The demand for greatly increased activity comes to all organs rather suddenly. Not all of them may be able to respond promptly or adequately. Thus the equilibrium of harmonious interaction is disturbed—the feeling of well being is disturbed.

Certain required metabolic processes are interfered with, elimination of various substances becomes incomplete, the entire endocrine system is brought out of balance, particularly as result of marked hyperactivity of some glands, the sympathetic nervous system is affected and approximately in this manner we can account for the various manifestations of disturbance common in early pregnancy and usually termed the *molimina of pregnancy*. These symptoms disappear as soon as all the organs and organ groups have accommodated themselves to, and fully comply with, respective demands. Molimina of later pregnancy, in part at least, are caused by changed mechanical conditions within the abdomen, chiefly by the pressure exerted by the large uterine tumor against diaphragm, intestines, ureters, bladder or e.g. against the ascending veins within the pelvic cavity. These manifestations terminate with the expulsion of the fetus. It is customary to ascribe the molimina of pregnancy to the formation of toxins as implied in the term toxemia. This might be correct for some cases but as a matter of fact no such toxin has ever been found or isolated, and the search for them is likely to remain futile. It is impossible within the scope of this short talk to enter into details but I might convey to you some idea of this newer conception of disturbed balance by speaking in more detail about the carbohydrate metabolism. Immediately with onset of pregnancy its profound alterations are proved by the fact that a tolerance test with 100 grams of dextrose (or one-half cc. of 1:1000 adrenalin solution followed by only 10 grams of dextrose) so regularly is followed by a glycosuria, that this method is accepted among the reliable pregnancy tests. Restriction in the intake of carbohydrates in the pregnant woman is prone to cause promptly a state of acidosis. Therefore, anorexia or nausea or vomiting (often only a mental manifestation and easily corrected chiefly through the suggestive effect of therapeutic efforts of all kind) through limitation of the carbohydrate intake develops into an acidosis which now aggravates the vomiting. If this is permitted to continue (and not relieved by prompt administration of glucose injections) the glycogen deficiency will lead to liver changes, which may become irreparable and thus the physiologic vomiting has gradually changed into incontrollable often fatal hyperemesis. The starvation in itself may cause other pathologic changes as the result of deficiency in other important substances, e. g. a neuritis and localized paralysis from avitaminosis. As soon as glucose administration makes feeding by mouth possible, great attention must be given to a sufficient intake of the various essential vitamins. Lack of vitamins undoubtedly plays a role in the cause of abortions. You see here a logical sequence from minor molimina of pregnancy, primarily caused by imbalance, into serious and even fatal conditions, not requiring for their explanation the presence of any particular toxins.

This might be an opportune place to make some remarks about abnormal food longings and other manifestations of seemingly disturbed mental function. There is a fine and significant difference between hunger and appetite. Hunger expresses the general need for food, appetite has a selective quality, it is a desire only for specific food. In this respect it resembles closely the so-called longings. Much evidence has more recently been supplied for the assumption that a craving of the pregnant woman for acids, sugar, salt, chalk and what not probably is based on and prompted by the actual need of the body for just the chemical substance contained in the desired food. Pregnancy requires completely balanced food intake and this balance often is deliberately disturbed by the desire of the woman not to get stout or to get thinner, to preserve her teeth, or to keep the baby small. A warning seems in place. In general, the healthy pregnant woman should be allowed and encouraged to continue her customary diet, if on investigation it is found to be balanced. If the gain in weight is too great, first it must be determined whether this is due to accumulation of fat or possibly to development of an edema—only then advice for limitation of carbohydrates or fat, or again of salt, etc., can be intelligently given. There is no doubt that some patients require administration of calcium or of viosterol and similar preparations. But I fail to see any justification for the increasing vogue of the routine use of such medication. If in this manner, as we are told, calcium intake and calcium retention are increased, this may benefit at some later date the teeth of the child; but, on the other hand, would it be any advantage to this child to have also hastened and increased the calcification of its skull bones during intra-uterine life? The fetus in utero in some sense is a parasite and extracts from the mother all the substances it requires. If they are not available in sufficient quantities, the mother will promptly develop the signs of deficiency and under proper prenatal care the physician should recognize them in ample time for instituting effective therapy.

Let us now turn to the complication of pregnancy with evident disease. The latter may appear only accidentally as for instance any type of acute infectious disease. Of greater practical importance, however, is the disease antedating impregnation, or disease only gradually manifesting itself in the course of pregnancy. Permit me to repeat two statements made in preceding remarks: "A seeming disturbance of health in early prgnanecy, as a rule, expresses an only temporarily deficient function of an organ." "Only rarely pregnancy is followed by a disease previously not present." From these two facts we can deduce that demands made on an organ by pregnancy do not directly cause permanent deleterious changes if the organ is in a normal and healthy condition. As we have already shown in connection with nausea and vomiting serious damage might, however, indirectly result. A special organ is prone to fail to meet demands, immediately or possibly only later when these demands become greater, if it is underdeveloped or, more often, when it had been damaged by previous disease. As our information in this respect increases we are more and more forced to the conclusion that pregnancy by itself but rarely creates disease. We should cease to use the terms nephritis or pyelitis of pregnancy and more appropriately should speak of nephritis or pyelitis in pregnancy. We now know that very many children develop a pyelitis, prominently on the right side, or a nephritis in connection with one of the common acute infections diseases of childhood. In ever increasing numbers these diseases now are diagnosed in young children and properly treated. Seemingly a complete cure ensues. Nevertheless, a certain deficiency may be remaining which will become apparent only when increased and exaggerated demands are made on functional activity of the organ (e. g. the kidney), or if unfavorable mechanical conditions (pressure of uterine tumor, etc.) hamper normal function as for instance in the case of an old pyelitis. The preceding disease has limited or fully eliminated what we now so often call "physiologic reserve." Such a reserve, available for sudden excess demands, is of tremendous importance in the preservation of health during pregnancy. If this "reserve" is prematurely exhausted, the continued and actually increasing strain on the organ will not only cause its further deterioration but may lead to its complete functional breakdown. It is possible that a woman during pregnancy, like at any other time, may develop an acute nephritis, but as a matter of fact most often we are only dealing with the restarting, exarcerbation and acute aggravation of a pre-existing condition. The lack of "reserve" had not become noticeable under normal demands. The same conditions seem to prevail in regard to cardiac or pulmonary disease. The heart may have accommodated itself almost completely to a certain valvular defect, congenital or acquired in childhood. The girl, as she grows up, is likely to develop a distaste for all physical exertion. She "hates athletics" but does not realize that this distaste is caused by the fact that jumping or running had made her pant. She leads a normal but quiet life, and in the course of pregnancy the presence of a pre-existing heart lesion becomes evident. Under the strain, which pregnancy puts on her heart, myocardial degeneration sets in, the heart becomes decompensated. Many of us carry completely or partially healed tuberculous lesions in the lungs. In the case of a woman becoming pregnant, increased pulmonary activity made necessary through the fetal demand for oxygen may cause aggravation or an acute flare-up of an old lesion, possibly never before diagnosed. Paralells could be easily cited in regard to previous impairment of other organs. Take an attack of acute appendicitis or of cholecystitis in the course of pregnancy. Indeed, it might be the first and original attack. More often careful study will show that there were previous attacks. The old appendiceal adhesions, now becoming excessively stretched by the growing uterus, have resulted in the present attack. Acute manifestations of cholecystitis during pregnancy often are due to the fact that gallstones are traumatizing the gallbladder wall either as result of vomiting or of pressure exerted by the large uterus.

It will not be necessary to offer additional illustrations to prove the possibility that pregnancy may exert an unfavorable effect on a coexisting disease, and so we may next consider the possibility of the untoward effect of maternal disease on the course of pregnancy or on the fetus. Intensive irritation of the bowels is prone to induce uterine contractions. For this very reason a large dose of castor oil is employed in the attempt to start labor artificially. Excessive motor activity of the bowels in cases of colitis or dysentery may lead to abortion or premature labor. High temperatures, especially those with sudden rise as in malaria, or deficiency of oxygen supply (pulmonary tuberculosis, pneumonia, etc.) may cause the death of the fetus. In other diseases toxic substances or pathogenic germs may reach the fetus through the placenta. The results of such placental transition vary greatly. The fetus can be killed or made sick or, indeed, may become immunized, as is seen e.g. in instances of maternal typhoid or smallpox. The most important and relatively most common, complicating disease of pregnancy, namely syphilis, unfortunately is also the one in which the fetus almost without exception is damaged to a varying degree. A more recent infection, possibly acquired at the time of impregnation, most likely will cause abortion. An older infection, particularly after some though insufficient treatment, is prone to delay expulsion to a later state of pregnancy. The child will be prematurely born, may be dead and then usually is macerated, or may be alive exhibiting, immediately or sometimes only later, unmistakable signs of the infection. But it is an important fact, which must be stressed, that adequate treatment of the syphilitic woman before impregnation and even during pregnancy will yield a fully developed and perfectly healthy child.

This brings us to the last problem to be considered, namely the management of pregnancy complicated by disease. The essential requirement obviously is the early recognition of the complicating disease. This means: The patient should consult the physician, selected to attend her during labor, as soon as possible after she realizes that she is pregnant. The physician at the time of first prenatal consultation must go carefully into the patient's past history and make a thorough general physical examination part of his routine. With the discovery of a complicating disease must begin its treatment. It need not be emphasized again how important this is e.g. in a case of syphilis. In the majority of instances of cardiac, renal or pulmonary complications further aggravation can be prevented by appropriate medicinal, dietetic or hygienic measures. In general, medical treatment is identical with that customarily given to nonpregnant individuals. For instance, in cases of malaria, quinine is administered without fear of causing thereby abortion. Statistics show that in malaria patients the chills prove decidedly more dangerous to the fetus than quinine. Surgical complications even within the abdomen, without hesitation, are operated on whenever there are clear indications for interference. In regard to appendicitis, pregnancy especially in its earlier stages may be accepted as one more justification for operation, because in unoperated cases, not so rarely, most serious complications quite suddenly arise from the tearing of protective adhesions as result of the contraction of the uterus after expulsion of its contents. It is important that in the course of such operations the pregnant uterus is manipulated and traumatized as little as possible. In cases of severe hyperthyroidism, unrelieved by drugs, partial thyroidectomy can be successfully done without interference with the pregnancy. Pregnancy is never a contraindication against any dental operation including extraction.

It would be impossible to enter here into further details and so I shall limit myself to the statement that among obstetricians the conviction is steadily growing that a coexisting disease, if properly treated, is less of a menace than generally assumed. This change of views is of great practical importance. Patients and many practitioners, inclined to look upon the co-existing disease as a serious complication, too readily consent to terminate the pregnancy. Let us take pulmonary tuberculosis as an example. Up to recent times tuberculosis was widely accepted as a strict indication for interruption of pregnancy. There are now available large and reliable statistics which prove that by far better results are obtained when the tuberculous pregnant woman promptly is given the benefit of adequate treatment without interference with her pregnancy. In the majority of instances the tuberculous woman who is artificially aborted soon returns to her former life and is not given, or neglects, treatment of the tuberculosis. It has been demonstrated that this entire problem of the complication of tuberculosis with pregnancy could be, and in some European countries has been, very satisfactorily solved by the opening of a maternity ward in every tuberoculosis sanitarium.

Any method of artificial interruption of pregnancy necessarily implies dangers of considerable importance for a woman already seriously sick. She certainly is a poor surgical risk. No surgical procedure should be attempted on any woman in the state of cardiac decompensation. The risks in general increase the farther along in pregnancy the woman is, and in dealing with advanced pregnancy we cannot afford to disregard entirely the rights of the fetus. For everyday practice at least two important deductions then can be drawn. First, if the diagnosis of a complicating disease is made very early and the risks for the mother's health or life are great, then the relatively least risky curettage may be available. Second, if the diagnosis is made near, or after the fetus has reached, viability, or if the disease had not been manifest or actually not existing before this time, our effort always must be to continue the pregnancy close to term. In the latter case the patient may gain the advantage of a spontaneous start of labor. For labor itself the question of pain relief (in heart cases), avoidance of strain (heart and pulmonary complication), prevention of infection (in diabetics), operative interference in form of version-extraction, forceps, cesarean section, etc., demand careful and individual consideration. Cesarean section under local anesthesia thus has developed into practically a standard procedure for cardiac patients who during pregnancy have been decompensated.

Cesarean section brings us immediately to the question of artificial, permanent sterilization. There can be no doubt that in dealing with the serious complications of pregnancy with disease cesarean section often is decided upon chiefly because it offers a ready opportunity to perform simultaneously a bilateral tubal resection. As impressively shown in some of the cases discussed by me in today's afternoon clinic, when faced with serious situations of this sort, the obstetrician realizes that this patient should never have been permitted to become pregnant, or certainly is entitled to either permanent sterilization or at least contraceptive advice for further protection.

Let me close with a few remarks about contraception. We meet patients, for instance, those with advanced tuberculosis, marked nephritis, or previous cardiac decompensation, seriously sick and pregnant. Our experience and medical knowledge convince us that another pregnancy may mean to her permanent invalidity if not death —which would mean to her living children the loss of the greatly needed mother. It becomes our duty to advise permanent sterilization, which is reliable only in form of an operation. I may add, that ethical or religious considerations obviously might prevent the patient from accepting such advice. There remains in everyday practice a much larger group of women in whom for medical reasons another pregnancy within a given time, in our belief, is undesirable or may involve definite danger. Also to her we should offer contraceptive advice, always with the warning that no known contraceptive procedure is absolutely reliable. It is left to her to accept or reject such advice.

It was possible to touch in this brief survey only a few of the most outstanding and more common problems created by the coexistence of disease and pregnancy. This combination, however, undeniably plays a significant role both in maternal and fetal mortality. For this reason in the last White House Conference on Child Protection, to a special committee was assigned the task of studying the causes of such mortalities and evolving some measures of their elimination. The results of investigations made in regard to the importance of complicating diseases in the causation of maternal and fetal deaths, carried out by many recognized authorities in the respective fields, quite recently have been published in book form (Appleton-Century Co.). Knowing that most of you are keenly interested in this problem in all its various aspects and unable to cover it to your satisfaction, I take the liberty of recommending to you careful perusal of this volume. It was prepared and published in the hope that it may prove a valuable means of reducing the present appalling loss of mothers and infants incident to pregnancy and labor.

DERMATOPHYTOSIS DOWN TO DATE*

FRED D. WEIDMAN, M. D.,
Philadelphia, Pa.

INCIDENCE

I am sure that dermatophytosis does not need much of an introduction to you. It has been so widely advertised in street cars, in the public press as well as over the radio and in our medical journals that it would be superfluous to further justify this paper. Indeed, I need only show a table in addition for what it will give you in the way of the actual statistics. In it you will note that upwards of 80 per cent of the medical students among our leading universities are affected by dermatophytosis. This suffices to give an idea as to how common the affection really is. Table 2 illustrates how the disease has increased year by year. It will be noted that cases increased rapidly shortly after the war until by 1925 it ranked high indeed among the dermatoses brought for treatment. In Table 3 the incidence is shown according to age; for example, in the second decade the number of cases increases, whereas in the later years of life they rapidly decrease. In Table 4 the incidence by months is shown; the greatest number of cases fall in the warm months—June, July and August.

TABLE 1

Incidence in Students (in Percentages)

	Number Examined	Clinically Positive	Microscopically Positive	Culturally Positive
Univ. of Penna. (1925)..	100	67	49	10
Univ. of Penna. (1932)..	500	60	43	12
Univ. of Penna. (1932)..	285	57 (women)	51	11
Univ. of Calif. (1929)..	1000	78.6		
Univ. of Calif. (1929)..	997	17.3 (women)		
Univ. of California........	3100 (freshmen)	53.3		
		15.3 (women)		
Univ. of Chicago (1928)	220	77		
	181	59 (women)		

TABLE 2

Incidence by Years

(C. J. White)

Year	No. Cases
1910	3
1911	5
1912	11
1913	14
1914	20
1915	17
1916	21
1917	25
1918	31
1919	79
1920	87
1921	131
1922	118
1923	148
1924	156
1925	147

TABLE 3

Incidence According to Age

(C. J. White)

Age	No. Cases
18 months	2
1st decade	10
2nd "	117
3d "	260
4th "	225
5th "	162
6th "	128
7th "	48
8th "	8
9th "	1

TABLE 4

Incidence by Months (Texas)

(Sharp and Taylor)

	Feet and Hands	Groin	Scalp, Beard	Nails
January	0	0	1	
February	2	0	1	
March	0	0	5	
April	7	0	2	
May	9	0	0	
June	15	1	4	
July	13	1	1	
August	13	2	4	
September	9	1	5	
October	2	1	2	
November	4	0	3	
December	2	0	0	

Passing next to involvement according to anatomical regions, our series of medical students conformed to usual experience in that most of the cases concerned the toes although there was a scattering of lesions in the groin and axilla.

SYMPTOMATOLOGY

The most common lesion which may be accepted as the type for dermatophytosis is a small red scaly patch between the toes. Most commonly it occurs between the little toe and the adjacent one. Additional patches, however, may be seen at the tips of the toes or underneath the toe—between it and the sole. However, extension is frequently observed on to the dorsum of the foot, in which case secondary (probably bacterial) infection leads to an additional, eczematous, feature. The entire gamut of changes noted in eczema may appear under these circumstances, even up to the production of vesicles and consequent crusting. The most diagnostic features of the dermatophytic nature of a lesion of this sort are the sharp margination of at least a part of the lesion, together with the presence of a delicate collarette of overhanging skin. Incidentally, it is a position such as this which should serve as the source of scrapings which are to be selected for microscopic examination. It is not uncommon for the toenails to also become infected, in which case they are deformed, thick, brittle, and brown. They are emphasized because they may serve as reservoirs, giving rise to the recurrences which are so annoying to both patient and physician. May I sound a note of warning, namely, that the margination and the collarette are not always present: probably it is the associated infection or perhaps medication practiced by the patient himself that is responsible for their absence.

---

*Presented before the Omaha-Mid-West Clinics, Omaha, November-December, 1933.

Extension from the foot rather commonly occurs. The palm and also spaces between the fingers are the parts likely to be affected. Again there may or may not be the sharp margination and/or the collarette which have already been mentioned on the dorsum of the foot.

Tinea cruris is but one of the several expressions of dermatophytosis. I need not elaborate on this well-known affection except to again enjoin the reader to select the most peripheral advancing portions of the lesion for microscopic examination. The central parts very often give negative yields of fungus—doubtless the infection has died out in this original situation.

In the axillae the lesions of dermatophytosis are not likely to be sharply marginated. Indeed, they suggest a seborrhoeic dermatitis or perhaps erythrasma and of course lesions in this situation always call for examination for tinea cruris and interdigital dermatophytosis.

The foregoing are the commoner expressions of dermatophytosis. More rarely psoriasiform patches may be found on almost any part of the body, in which case microscopic examination for fungus is requisite for accurate diagnosis. A rarer form is a severe, horny thickening of the palms and soles which may be so extreme as to mimic ichthyosis. Widely disseminated, multple. perhaps carcinate lesions or patches may also occur either with or without tinea cruris, tinea axillaris, and so forth. Indeed, what is known as the exanthematic form may occur as an acute, perhaps allergic expression. This may mimic measles, at least dermatologically, the real nature of the affection being cleared up only at later stages of the disease where it has concentrated in intertriginous positions and thus attracted attention to dermatophytosis as the cause.

DERMATOPHYTID

This is one of the most actively discussed phases of dermatophytosis at present. The generally accepted sense is that it is allergic, inasmuch as the fungus itself cannot be demonstrated in the lesions. Red. scaly patches on the palms are the commonest expressions, but papules and macules elsewhere also classify as dermatophytids in the presence of authenticated dermatophytosis between the toes. The diagnosis of dermatophytid may be supported, supposedly, by the trichophytin test. Trichophytin, an extract made from different fungus species, may be injected intradermally or applied upon a piece of gauze to the surface of the skin. The readings are made much in the same way as in the tuberculin test.

To sum up the symptomatology, the classical lesions are those which occur between the toes, between the thighs, and in the axillae, but after that less distinctive lesions are met sufficiently frequently to introduce real problems in differential diagnosis. If there are frank, preferably microscopically proven lesions of dermatophytosis between the toes, further examination of associated lesions is demanded, particularly by laboratory methods. If present, the trichophytin test is in order to conclude whether one is dealing with dermatophytid.

DIAGNOSIS

The most important single diagnostic feature of dermatophytosis is its intertriginous location. After that, if there is a tendency towards sharp margination of the lesion, either with or without the peripheral collarette of skin, the diagnosis is materially assisted. Finally, there is a simple and positive microscopic examination, so simple that it can be practiced in any office.

MICROSCOPIC EXAMINATION

Remove some of the scales at the margin of one of the patches, place on a glass slide, add a small drop of 10-30 per cent solution of potassium hydroxide, and apply a cover slip. This completes the preparation. It is obviously so simple that the physician cannot be excused from making it. Under the microscope the fungus when present appears as more or less branching and segmented threads. Upon the threads spores will appear. The physician can develop his personal technique equation very readily upon known cases of dermatophytosis before proceeding to the unknowns. Incidentally, yeast cells are rather frequently the cause of dermatophytosis; they are more difficult to recognize, but fortunately they sometimes produce mycelium also. Association with the latter is of material assistance in identifying the presence of fungus.

In the case of more delicate scales such as those from the thighs or the dorsum of the foot, the preparations are ready for examination within ten or fifteen minutes; however, in the case of thicker portions such as cannot be avoided between the toes it may be necessary to gently warm the preparation or let it stand for ten or twelve hours before it becomes sufficiently clear for microscopic examination.

ETIOLOGY

No less than thirteen different species of fungus may cause dermatophytosis. However, for the United States there are but three or four which are commonly met—Trichophyton interdigitale, Epidermophyton inguinale, and Trichophyton purpureum. These three species appear radically different in the test tube, and once they become familiar to the physician they are readily identified. As already hinted, certain yeast species, notably the monilias, may be responsible.

HYGIENE

That the fungus may remain viable for a long time even when kept entirely apart from the human body has been amply proven. In my own laboratory we have found that it remained alive in one case 105 days, and in another 433 days when kept in paper envelopes. Others have demonstrated the same thing, although for a lesser number of days. If such is the case it can doubtless also remain viable around our houses in rooms, furniture, shoes, and other articles of clothing not amenable to thorough sterilization. This, of course, is significant in explaining recurrences of the disease. I have taken pieces of leather from old shoes, sterilized them in a test tube, and planted fungus upon them without the addition of nutrient material of any kind. There was definite growth of fungus when planted upon such material, indicating that leather alone can support the growth of these parasites.

As to prevention in particular, we have no accurate scientific knowlege as to how it can be accomplished. The precautions next to be recommended are based simply upon reason and deduction. Thus, knowing that it is people who perspire freely who are particularly liable to the infection (athletes, students, high-strung business men, musicians) it is well to prevent moistness of the feet as much as possible. After the bath the toes should be thoroughly dried. Dusting powder may be used. Wool socks may be enjoined because they might prevent more efficient ventilation and make the feet too warm. Naturally, when using the bath towel it would be better to dry the upper part of the body before passing to the toes, thus minimizing transmission from the toes to the rest of the body. Cheap paper slippers (cost about 2c a pair in quantities) are means which might minimize transmission from infected toes to others and at the same time reduce the likelihood of picking up infection.

It appears that boric acid has a certain fungicidal value; it may therefore be incorporated with talcum when it is used as an ordinary dusting powder (shaken both into the shoes and onto the feet). Foot baths of formaldehyde or alum may counteract undue laxity of the skin and reduce the tendency towards moistness or even maceration.

In gymnasia and locker rooms there is a particular hazard due to the likelihood of the fungus being found there. Cement floors are superior to wooden ones because they do not contain as many crevices to harbor the fungi. In numerous institutions, particularly high schools and colleges, the architects have arranged runways in such a manner that the student is compelled to step in the fungicidal solution which they contain before entering the dressing room. Hyposulphite and hypochlorite of soda appear to be the most efficient. Where such runways are not available, pans may be substituted.

INDUSTRIAL ASPECTS

It will be seldom that a particular type of lesion, or for that matter a particular species of fungus, will be sufficient to incriminate a particular occupation as the source of a given case of dermatophytosis. The affection is so ubiquitous that there are many other sources where the workman might have acquired it. However, in those cases where the fungus is known to have a habitat upon raw materials the case becomes much clearer. For example, a mycotic paronychia in canners was found to be due to a certain yeast-like organism which is also present in the fruits handled by the workmen. Similarly, a paronychia epidemic on orange workers in California was regarded as due to a mucor which also parasitized the oranges. Workers in a paper factory in Japan were affected by a fungus which also parasitized the raw plant fibers which were the basis of the manufacture of the paper.

Among similar lines ringworm in cavalrymen has been found due to a fungus commonly the cause of horse ringworm, and the case of Tilbury Fox where a white pony was followed by a trail of human ringworm cases as it went from one stable to another is highly suggestive of an occupational factor.

Such highly suggestive occupational hazards as the foregoing are, however, rare, and other evidence generally has to be adduced if the occupation is to be incriminated. Thus, the occurrence of dermatoyphytosis in large groups of workmen in a single factory may be adduced as evidence. An epidemic involving 194 out of 1000 women was probably due to carelessness in allowing employees to throw their clothing into a common heap. After disinfecting such clothing and supplying individual clothes hooks the epidemic was controlled. This implied an obligation on the part of the employer to supply proper housing and other sanitary facilities, a matter quite apart from the work per se.

Again, where an organism demonstrated upon raw materials is found to be able to produce dermatophytosis upon the plaintiff once it had been experimentally inoculated on his skin would be rather convincing evidence.

After the foregoing there remains the larger accumulation of cases where definite connections cannot be traced between either the raw materials or fellow workmen and the plaintiff. That is, where the mycosis might be but an intercurrent affection. It would be interminable to attempt to appraise every individual situation on the basis of predisposing causes. Each such case has to be individualized, preferably by a dermatologist who knows the situation thoroughly and who can view the individual case in the light of all the data available for that case. For example, the law in Massachusetts provides that workers are entitled to compensation not only for primary disability but also for secondary complications arising from it. Thus, a baker handling flour, sugar, and chocolate might develop a fungus infection of the hands. Thereupon, the question arises as to whether the affection was fungus in nature from the very beginning and the plaintiff acquired it before entering the employ of the defenant; if so, it was not compensable. On the other hand, if the affection was primarily due to bakery stuffs and the superimposed mycosis was acquired at his last place of employment, the affection was compensable. In this particular case there was no proof either way and final judgment was impossible.

In a second case the employee in a dye house suffered from an acute dermatitis of the hands three weeks old. It improved under treatment leaving his dermatophytosis. The ruling of the court was that there was a primary fungus infection which was unrelated to his employment. Hence there was not any compensation.

Practical application of complicated cases of this sort indicate the necessity that industrial establishments should establish accurately the nature and the time factors of all dermatoses on their employees at the *earliest possible moment.* This should be done by trained observers—particularly ones who are familiar with the possibilities in the way of claims for compensation. Only in this way can employers and all concerned meet their responsibility in passing equitably in matters of compensation. Had this been done in the two specific cases above cited the premises would have been more satisfactory and the final decision have been made more convincing and equitable. It is true that the physician regularly attached to an industry may be qualified to handle most cases, but the situation is so highly involved that, by and large, only a specialist with a complete perspective not alone as to symptomatology but etiology is needed if all of the ins and outs are to be analyzed and related to the laws on compensation.

THERAPEUTICS

Naturally first thoughts turn to fungicidal chemicals. Actually there is a long list of such which in the test tube can easily kill the fungus. In actual practice, however, results do not conform to what might be expected. Thus, the factor of penetration of the fungicidal substance enters into the situation, so that in the final analysis the appraisal of value depends upon (actual clinical) trial and error. There are dozens of vaunted fungicides which testify to the unsatisfactory state of treatment of dermatophytosis. There is not any standard treatment. Every dermatologist has his particular pet. The recommendations which are made herewith have therefore the value only of personal opinion.

First and foremost, the particular stage at which the dermatophytosis has arrived must be appraised. It is axiomatic in dermatology that strong irritant applications should never be made to an acutely inflamed skin—an axiom which also carries over into the treatment of dermatophytosis. Thus, in the acute, perhaps vesicular, stages where the affection resembles eczema, soothing applications only are in order. Hot soaks of Burow's solution (diluted 1-12), hot boric acid or hot permanganate may be applied in the more severe eczematous cases every three or four hours, drying the parts thoroughly after each bath. Boric acid or other soothing ointments should be substituted at night. After the acute stage has been corrected, and then only, may the physician pass to the stronger fungicidal agents. Of the latter the writer prefers the conventional Whitfield's ointment to be applied morning and night. If after trial this does not suffice, tincture of iodine nay be essayed, guarding against possible idioyncrasies on the part of the patient. It may be vell to begin with half strength tincture before assing to the full strength. As a final resort, hrysarobin ointment, 20 grains to the ounce, may e tried, but with extreme caution. The latter lrug has well known possibilities for producing evere dermatitis in predisposed individuals.

In conclusion, may I say that, regardless of the uccess of any form of ringworm therapy or prophylaxis, I feel that dermatophytosis is with us to stay. Even though a lesion be cured—cured in the fullest sense—reinfections can still occur. After that, even such reinfections will never be completely preventable simply because the general public is so heterogeneous that it cannot be made sufficiently "ringworm-minded" against such a lowly condition as ringworm of the toes. The physician is destined to continue to meet these cases for a long time to come.

BIRTH INJURIES OF THE CHILD

HUGO EHRENFEST, M. D.,
St. Louis.

A series of 30 lantern slides will enable me to oint out to you a few important facts concerning the origin and possible prevention of the more common types of birth injuries of the child.

I wish to emphasize as first fact that the term "Birth Injuries" commonly has come to mean "Intracranial Injury." This is unfortunate because as a matter of fact practically every anatomic part and structure of the infant can become injured either in the course of labor itself or incident to artificial delivery and to manipulations of the newborn, particularly in the effort to start delayed respiration. Including all this possible damage, we can assert that traumatization of some sort incident to birth is a common occurrence. An examination of the mouth of a baby reluctant to suckle, often reveals traumatization of mouth or palate as the result of too brusque an effort to remove aspirated mucus or blood. The tracheal catheter in the hands of the inexperienced can result in fairly serious injuries. We know that forceps application in a considerable percentage of cases leads to a facial palsy. Almost without exception the symptoms disappear promptly and we hardly consider such a palsy as an injury. This same indifference concerning actual traumatic damage unfortunately often is exhibited as well in regard to brachial palsy. In the majority of instances the arm begins to be moved normally but relatively often the damage is of serious nature and the infant years later is presented to an orthopedic surgeon who will experience great if not insuperable difficulties to restore function. Speaking of brachial palsy I wish to point out a discovery of great practical importance. It seems that fairly often injury of the brachial plexus is associated with damage to the phrenic nerve on the same side. Paralysis of one-half of the diaphragm then results in difficulties with respiration and the erroneous diagnosis of pneumonia or pleurisy is made. The correct diagnosis can be made only by observation of the movements of the diaphragm under a fluoroscope, when the upward motion of one-half of the diaphragm during inspiration is seen to be paradoxically associated with a seeming downward motion of the other half. I might add that the phrenic palsy as a rule sooner or later disappears completely.

Continuing in my brief enumeration of possible and not uncommon injuries I must mention injuries, usually light but often serious, to the eyeball, the eyelids or the orbit. Most of them are produced by the forceps, some of them, among them very serious ones, by the finger of physician or midwife, who has failed to recognize the existing face presentation, and mistaking the lid fissure for a cervix, attempts to dilate it forcibly. In this identical manner we must account for serious rectal injuries, and in girls for complete perineal tears, when a presenting vulva or rectum was taken for a thick, unyielding cervix. Then there are the injuries to internal organs usually diagnosed only when an autopsy, an exact and thorough autopsy, can be done—injuries of liver or spleen, the rather common hemorrhages into the adrenals, rupture of intestines, damage to the lungs. Let me say a few words about the latter. Serious injuries are inflicted by pulmotors which drive too large a quantity of air or gas mixture with too great a force into the fragile alveoli which thus actually explode. That this fatal damage can be done even by mouth to mouth breathing, I saw quite recently in a case where the procedure was performed by an experienced interne who was "extremely gentle" as he asserted. Pulmonary damage and some of the just mentioned injuries to abdominal organs are most likely to occur in connection with resuscitation. In this respect the Schultze swinging undeniably is the most risky method—it should be eliminated from all textbooks. The newborn baby, and particularly the one which is in a precarious condition because it is not breathing, should not be subjected to so brusque a treatment. But I shall return to this particular point later on and now demonstrate some of my slides.

Undeniably birth injuries of all kinds do occur in entirely spontaneous labors, and by "spontaneous" I mean to exclude the administration of a pituitary preparation and even any encouragement of the patient to bear down harder. They occur even in the absence of any attendant physician or midwife. This is an important fact in view of the prevailing custom to blame such injury on the attendant but, on the other hand, we must admit that most often such injuries have a good deal to do with interference of some sort, and that their incidence does stand in a direct and close relation to the skill of the obstetrician.

These pictures of fractures of long bones demonstrate an occurrence not rare especially in the management of breech labors. An arm thrown above the head may offer considerable difficulties and in the effort to save the endangered fetal life we might, at rare occasions, hasten progress by deliberately breaking the obstructing arm. But most often with proper gentleness such injuries and particularly fracture of the leg can be prevented. Here is a photograph of an evidently fractured leg. Another slide, the x-ray picture of the same extremity, shows callus formation and thus proves that the fracture had occurred some time ago, during pregnancy, possibly as result of pressure from a fibroid, excessive pressure of uterine wall in the absence of a sufficient amount of protective amniotic fluid, or—as most often is the case—as the result of an external trauma, a fall, a blow. You will appreciate the medicolegal importance of such a possible differentiation of an actual birth injury from one previously sustained.

Nobody really knows how often a clavicle is fractured incident to birth, possibly during resuscitation. As a matter of fact, the injury is usually diagnosed only much later when mother or nurse discovers a lump—the callus. But experience has shown that, for instance during swinging after Schultze, one end of the fractured clavicle may be driven into the lungs. Here is the x-ray picture of a baby brought from a southern state to our hospital for operation of a cleft palate and harelip. The baby seemed in rather bad shape. In the course of careful examination this plate revealed that the baby, on one side, had a broken clavicle, five or six broken ribs and a broken humerus. We were unable to ascertain how all these injuries were produced but noteworthy is the fact that this extensive traumatization of the child was discovered rather accidently. The child, I might mention, after operation left the hospital in satisfactory condition.

Here is the picture of a very unusual injury—a boy about ten years old whose left arm is missing. It had been deliberately cut off by the attending obstetrician, confronted with a neglected transverse presentation, to facilitate version. He had made but one mistake in his diagnosis—he thought the child was dead. The terrible mutilation of this boy is the result of this error.

The next slides will deal with intracranial injuries. They obviously represent the most important type of damage because such injuries may cause not only immediate death but often become responsible for deficiencies in mental and physical development of the child later in life.

A most important factor in the causation of intracranial damage is the necessary molding of the fetal skull in the second stage of labor during its passage through the bony pelvic canal. Only in the human the skull at birth is not a solid capsule but consists of various bones more or less loosely connected with each other by means of sutures and fontanelles. In all other mammals ossification is much farther progressed, the skull is a solid capsule and, as far as we know, intracranial birth injuries in them are unknown. These pictures show you how in the molding process the shape of the skull is changed through partial overlapping of skull bones at the site of sutures and fontanelles. You know that at various levels the relative dimensions of the pelvic canal are changing. Molding enables the gradually descending head to adapt its various diameters to those of the plane through which it passes. Externally these effected changes might express themselves in form of a cephalhematoma, when the overlying skin and periosteum have been loosened from the underlying skull bones. Such hematomas usually are single and always one edge terminates exactly at a suture line. A cephalhematoma in general represents an unimportant lesion on the infant's skull and for this reason its true significance is usually overlooked when in rarer instances a difuse hematoma actually is formed by blood escaping from a fracture of the underlying skull bone as shown in the next slides. Or the bone might not be actually fractured but merely depressed or indented. Fractures and deep indentations of such bones necessarily play an important role in the causation of intracranial damage but, as I will show you in the next slides, the occurrence of intracranial injuries is not necessarily associated with external evidences of traumatization and most commonly depends upon the tearing of certain dura folds as the result of overstretching from excessive or sudden change of configuration of the head.

The fact is now generally admitted that the falx protects the skull against undue extension of its longitudinal diameters. Elongation of the head causes stretching of the falx and when there is added further strain as result of exaggerated upward curving of the parietal bones. the strain on the falx will prove too much for preservation of its integrity. It will tear and this is most likely to occur at the free edge of one or both tentoriums into which posteriorly the falx splits. The presented diagramatic pictures and the several photographs of heads as seen at autopsy make this mechanism quite clear and show you that in most cases the intracranial damage primarily consists in a tentorial tear, unmistakably the effect of unfavorable mechanical conditions evolving chiefly from excessive or sudden alterations in the shape of the fetal skull.

Here I wish to emphasize another common error and carelessness in terms used in connection with intracranial birth lesions. To speak of them as "intracranial hemorrhages" is inexact and often wrong. The mechanically produced lesion may or may not be associated with a hemorrhage. This is determined by the fact whether or whether not the dura tear opens up a small or large vein, or a sinus. The amount of extravasation of blood secondarily will be dependent upon the fact whether the torn vessel is almost empty or engorged (as is the case in asphyxiated infants or always in the after-coming head.) The ability of the blood to coagulate promptly will play a role, because in a case of delayed coagulation a hemorrhage may continue unduly long and thus in its harmful effect on the infant finally equal a sudden severe hemorrhage. Some of these photographs clearly show small and even larger holes in the falx, not involving the free edge, not tearing through any vessels. They express unmistakably the traumatic effect of labor on intracranial structures but by themselves they are not responsible for the death of the child, because they are not associated with noteworthy hemorrhage.

All the dura folds are particularly fragile in the premature infant. We know that many premature babies die soon after expulsion. The diagnosis on the death certificate most likely will read "asphyxiation" or "congenital debility"—in most instances it will be incorrect. Systematic autopsies on such babies prove that in the overwhelming majority of them death was due to intracranial damage, as a rule resulting in hemorrhage. A famous Swedish pediatrician asserts that the immediate and later fate of a prematurely born baby depends chiefly on the amount of intracranial damage it has sustained during birth. The obstetrician must accept this view as valid. Just in the management of premature labors the physician must try to avoid any traumatization by not hastening labor, e. g., by giving pituitrin or applying forceps. It may seem surprising to you that our strict advice is always to make an episiotomy in a primigravida when the baby is premature or seems very small.

A few slides will show you why it is so important to apply the forceps as closely as such is possible across the transverse diameters of the head. Application of forceps in any other direction of necessity causes excessive compression which might prove dangerous or fatal. If the head is not fully molded and not completely rotated presenting at the outlet, forceps extraction always involves certain risks to the baby, and these risks become the larger the higher up the head stands at the time. Extreme care in the proper application of the instrument on the head. after its position, degree of flexion and rotation have been exactly ascertained, together with restraint in the amount of force used during traction will reduce these risks to the baby to the possible minimum, but still will be existing. Therefore, we cannot say that a forceps extraction, presumably done in the interest of the baby. will necessarily prove beneficial to the baby.

Injuries of all types and especially intracranial injuries occur particularly often in connection with management of the aftercoming head in a breech labor. The notoriously high loss of infant life in such labors is commonly ascribed to asphyxiation. It is commonly but quite erroneously thought that for this reason the head must be extracted quickly. Careful post mortem studies of such babies show that in approximately 90% of the cases death actually was caused by intracranial damage, usually a tentorial tear with large hemorrhage. Therefore, we are justified in asserting that undue haste in extracting the aftercoming head is likely to do much more harm than the unnecessarily dreaded asphyxia.

I will close with a few remarks concerning asphyxiation. The newly born baby may fail to breathe promptly and properly for various reasons. There often is an obstruction in the air passages through aspirated mucus or blood. The careful cleaning of the baby's mouth as soon as it can be reached—even before the rest of the body is born—is an essential requirement, because with the first deep inspiration such foreign material may be aspirated into the lungs and result in a pneumonia. Babies may fail to breathe because drugs, especially when twilight has been used, temporarily dull the sensitiveness of the respiratory center. These babies after a while will begin to breathe, at first respiration will be shallow and slow but gradually will become normal. There is still another fairly large group in whom the respiratory function does not start in response to accumulation of carbon dioxide because the respiratory center has been traumatised. The trauma may be only slight and temporary, or it can be severe and irreparable. The babies of this last group offer a typical clinical picture. There is not the slightest breathing effort noticable but the heart is beating and may continue to do so for some time. All efforts at resuscitation finally prove effectless. Under such conditions it is safe to diagnose the cause of death as "intracranial injury." In those newborn infants whose respiratory center is only slightly damaged, the clinical picture at first is the same, but after a while respiratory efforts can be noticed and finally breathing becomes established. But such a fortunate outcome can be actually prevented by too vigorous manipulations of the infant in the course of resuscitation. In dealing with a cerebral concussion or a probable intracranial injury in an adult, it never would occur to you to stand this individual on his head by pulling him up on his feet or shaking him violently. You would keep him quiet, with the head slightly raised, might apply an icebag to the head, and attempt to start or keep respiration going by gentle efforts. This is exactly the treatment to give any newborn baby suspected of having an intracranial injury, and since it is difficult or impossible to exclude this cause to account for absent or deficient respiration immediately after birth, this type of treatment, characterized by extreme gentleness, represents the only commendable method of resuscitation, likely to afford benefit and unlikely to further aggravate the already critical situation.

ACUTE ENCEPHALITIS AND INFLAMMATORY CEREBRAL COMPLICATIONS AS FOUND IN THE GENERAL PRACTICE OF MEDICINE*

HARRISON A. WIGTON, M. D., F. A. C. P.,
Omaha, Nebraska.

The various forms of encephalitis may be grouped under purulent and nonpurulent types. Both may be secondary to acute infections.

Purulent encephalitis results in brain abscess located deep within the brain substance or superficially where the pial vessels first become thrombosed. This may produce multiple abscesses or sinus thrombosis. Brain abscess is inclined to be irregular in shape, tending to burrow along, forming secondary abscesses. Such conditions make it difficult to establish adequate drainage.

Brain abscess may complicate skull fracture, otitis media, mastoiditis, accessory sinus disease, pyemia, abscess of the lung, empyema, purulent bronchitis or tuberculosis.

There are three main groups of symptoms: First, those due to increased intracranial pressure, second, those due to inflammation in the brain, and third, focal symptoms.

Due to increased intracranial pressure we have two types of headache, general and localized. These headaches are inclined to be intermittent and intense. Vomiting may be present, either projectile without nausea or, in cerebellar abscess, vomiting with nausea. Next there may be mental dullness and apathy combined with a slow pulse of 55 to 60. The pulse is slow in relation to the temperature. Furthermore, there may be disturbances in respiration such as Cheyne-Stokes type showing medullary involvement. Optic nerve changes are not so marked as in brain tumor unless the ventricles are blocked by pressure. Neurological examination may show paralyses of cranial nerves, and changes in the deep and superficial reflexes.

Among the symptoms due to inflammatory processes in the brain we find first, changes in temperature ranging from subnormal to 101 or 102 degrees, second, moderate emaciation due to trophic disturbances, and third, changes in the cerebrospinal fluid. This spinal fluid may be normal and sterile but oftentimes it is under increased pressure and is turbid. There is then an increase in polynuclear elements.

Of the focal symptoms the more common are the ones with temporo-sphenoidal localization.

---

*Presented before the Omaha Mid-West Clinics, November-December, 1933.

Here we have aphasia, especially loss of memory for names of objects. Sometimes there may be a paralysis of one extremity. Time does not allow us to more than mention the parietal, internal capsule and frontal lobe localizations.

Cerebellar abscess presents several of the following symptoms: Tremor of the extremities, disturbances of speech, changes in tone of muscles, spontaneous past pointing, spontaneous falling, weakness of muscles of one-half of the body, fixed attitude of the head, disturbance of weight estimation, nystagmus, rotatory or horizontal, lack of coordination of muscle groups, tendency to overreach in touching the tip of the finger to the tip of the nose and inability to rotate opposite forearms equally. Where the pons is involved there is hemiplegia or a crossed paralysis. In the medulla localization there will be certain disturbances in pulse, respiration and swallowing.

The abscess may show no symptoms till rupture occurs and meningitis results. As a rule, however, there are commonly four stages: the initial stage with chills, fever and malaise, the latent stage lasting from a few days to many months, the manifest stage as just outlined and the terminal stage with rupture of abscess into the ventricle or upon the surface of the brain.

There are four important pathological conditions which should be considered in differential diagnosis, brain tumor, meningitis, labyrinthitis and sinus thrombosis. First, in regard to brain tumor, middle ear trouble, fever, a latent period after a first brief attack and little if any change in optic discs, favor a brain abscess. Second, the spinal fluid should distinguish between true meningitis and an unruptured brain abscess. Third, in labyrinthitis there is no headache or change in the spinal fluid. The vestibular tests such as the caloric and turning tests should be carefully done. Fourth, sinus thrombosis if present should give a septic temperature curve. Bacteremia may be present.

When death occurs it may be the result of rupture of the abscess on the surface of the brain or into the lateral ventricle, failure to find the abscess at operation, occurrence of a second abscess or other chambers in the one abscess, sinus thrombosis, pyemia, shock or terminal pneumonia.

A favorable prognosis may be expected if the abscess is near the surface of the brain and if there is a capsule about the abscess.

Nonsuppurative encephalitis and encephalomyelitis are terms used to include many different syndromes. Some are quite common as polioencephalomyelitis, epidemic encephalitis, and forms that are secondary to an antecedent systemic infection.

Globus has grouped syndromes of non-purulent encephalitis as follows:

1. The meningoencephalitic group.
2. The metastatic or embolic type of encephalitis.
3. The confluent form of encephalitis; ie, dementia paralytica.
4. Polio-encephalitis of the patchy type.
5. Acute disseminated demyelinizing encephalomyelitis; ie, multiple sclerosis.
6. Perivenous encephalomyelitis.

Polio-encephalitis of the patchy type includes the Heine-Medin and von Economo forms of polioencephalitis, also rabies encephalitis. The first of these include poliomyelitis and polioencephalitis. The von Economo forms include the different encephalitic syndromes presented in the various epidemics. Perivenous encephalomyelitis includes the so-called postvaccinal form as well as those following measles, chicken pox and smallpox.

The recent outbreak of epidemic encephalitis or von Economo's disease is different from the epidemic occurring at the close of our recent war and has been designated as "Encephalitis B". It presents many features of the Japanese epidemic of 1924 in which the aged were prone to develop the disorder, a run-down condition predisposing. The etiology is still in question. Apparently there is a filter-passing virus responsible for the disorder. The work of Rosenow is of great interest but at the present time his conclusions are not generally accepted.

The general symptoms of the recent encephalitis as seen in Omaha have been those of a severe general infection with fever, headache, vomiting plus an early developing mental confusion deepening into a semi-comatose state from which the patient can be somewhat aroused. The typical lethargic state of other years has not been much in evidence. The mild cases had an onset like influenza, a short period of double vision being occasionally present. Fever in these cases lasted from six to eight days. Cerebrospinal fluid pressure varied in my cases from eight to sixteen millimeters of mercury, a moderate increase. The spinal fluid cell count of the mild cases ranged from seventeen to ninety cells, eighty per cent lymphocytes. Recovery in these cases occurred without complications. Several of my patients showed tremors of the left side of the body. All showed a tendency to guard the neck while nearly all had a definite neck rigidity, suggesting meningitis. Intense headache, delirium, and clouding of consciousness were present nearly always although these symptoms were of very brief duration in the less severe type. Dizziness and a feeling of falling was pronounced in two patients. Other symptoms noted were speech difficulties and vomiting without nausea. High temperature was the rule in the severe cases. This gradually subsided so that in the non-fatal cases the temperature was well under control in six to eight days. Some cases showed leucocytosis, others did not. The blood sugar was above normal in several. The spinal fluid sugar was usually increased. In one patient there was 120 milligrams of sugar in the spinal fluid and 170 milligrams in the blood. The cell count averaged below 100 cells although a number had several hundred cells. Autopsy confirmed the diagnosis in two cases.

It is too early to make any statement about the sequelae of the recent cases. However, in the past the later development of the typical Parkinsonian syndrome has been the rule in perhaps forty to fifty per cent of reported cases. Oculogyric phenomena are rather rare manifestations Changes in behavior have been noticed in children who have suffered from encephalitis. A frank mental disorder requiring institutional care is rather rare.

Differential diagnosis requires elimination of meningitis of various types, meningovascular syphilis, brain tumor and uremia. The cerebrospinal fluid is our best help and Wassermann tests should invariably be made.

Although quite rare, postvaccinal encephalitis is a serious condition with a high mortality rate. A similar syndrome may follow many of the exanthemata and other infectious diseases. The vaccinal form occurs about ten days after scarification and is not associated with a mixed infection. The symptoms may be those of the severe type already described with the addition of stiffening of the jaw muscles, a definite trismus. In addition, symptoms due to spinal cord involvement such as bladder disturbances are quite common. These sequelae have been known to lead to fatal termination two or even three years later.

RATIONAL TREATMENT OF ENCEPHALITIS*

G. A. YOUNG, M. D.,
Omaha, Nebraska.

Rational treatment of any disease is based upon a sound knowledge of the pathology of the disease in question. It is advisable, therefore, first to discuss, briefly those pathological conditions present in encephalitis which have a bearing on effective treatment.

Purulent encephalitis is not included in our discussion because of lack of time and because the disease is a surgical problem, occurring generally as a complication of acute paranasal sinus infection, mastoiditis or bronchiectasis and being recognized by signs of increased intracranial pressure and of a focal brain lesion, the patient should be sent to a neurological surgeon and the responsibility of the internist ends there.

With the non-purulent infectious encephalitis and meningoencephalides our problem is different. Here the patient remains a medical situation throughout and the responsibility continues with the physician. As Dr. Wigton has told you, there are several varieties of encephalitis in this group. The classification is based upon etiological, clinical and pathological considerations. I propose first to take up meningoencephalitis complicating adjacent local infection, epidemic encephalitis and polioencephalitis and post-infectious encephalitis as they have certain pathological processes in common. These are (1) exudation, resulting in cerebral edema and swelling and a perivascular infiltration with round and plasma cells; (2) proliferation of the fixed mesodermal and neuroglia cells to form scavenger cells, and (3) alterative changes in the parenchymal cells or neurones due to the toxines of the disease. Besides these major changes we may have small hemorrhagic foci scattered here and there throughout the more severely affected regions.

The problem of treatment therefore calls for measures designed to combat these three main processes described and can be summarized as follows:

1. Reduction of edema.
2. Washing out perineuronal and perivascular spaces.
3. Neutralization of toxines present.

(1) REDUCTION OF EDEMA

This is best accomplished by the use of intravenous injections of from 100 to 150 cc of fifty per cent hypertonic glucose. These injections may be given daily or even twice daily for three or four days according to the severity of the illness. It is remarkable how often the whole picture of the case changes where glucose is given in this way early in the course of the disease. Patients who may be deeply comatose and unresponsive become responsive and take fluids and nourishment where previously they had required gavage. The injections should be given slowly taking at least twenty minutes. During the procedure the extended arm should be bound to a board splint to facilitate the injection.

---

*Presented before the Omaha Mid-West Clinics, November-December, 1933.

(2) WASHING OUT THE PERIVASCULAR AND PERINEURONAL SPACES

This is done to a certain extent by the glucose injections which by osmosis draw the fluids away from the tissue spaces to the blood vessels. The vascular stasis associated with the edema is relieved and tissue elimination is favored. Lumbar puncture is also a measure of great value, especially where there is an excessive production or retarded absorption of the cerebrospinal fluid as shown by an increased spinal fluid pressure with a free flow of fluid. Lumbar or cisternal puncture may be done daily as long as there are no indications of herniation of the brain in the foramen magnum. Indications of such a herniation may be seen in a slow pulse, papillodema and rigid neck. Herniation should always be thought of, if during lumbar puncture the patient complains of a sudden pain in the neck and there is a rapid drop in the rate of flow of the fluid, the needle should be at once withdrawn and the foot of the bed elevated. While herniation of the foramen magnum is most frequently seen in brain tumor or abscess it should be also recognized as a not infrequent complication of meningococcus meningitis and of encephalitis of perhaps fatal character. Intravenous glucose injections are of life saving importance in such cases.

Another method of washing out of the perineuronal and perivascular spaces is that of Kubie which consists of forced spinal drainage by the intravenous injection of 1000 - 2000 cc of half normal saline solution and the continuous drainage of the spinal fluid by lumbar puncture. The needle may be left in situ for twenty-four hours. In these cases we find that the spinal fluid shows an increasing lymphocyte count as the drainage is continued which is an indication the desired objective is being obtained.

(3) NEUTRALIZATION OF TOXINES

A clinical distinction should be made between meningoencephalitis dependent upon a spread of an adjacent local infection such as sinus or mastoid disease which not infrequently results in a non-purulent encephalitis and those forms of encephalitis which result from a general infection such as epidemic encephalitis or measles encephalitis.

In the first instance surgical measures should be employed at once to remove the nidus of infection and then the treatment of edema and removal of exudation cells may be energetically carried out.

In the second type neutralization or elimination of toxines should be attempted at the earliest possible moment. Three types of treatment to accomplish this aim should be noted.

1. Use of convalescent serum, specific serum and vaccines.
2. Foreign protein shock therapy.
3. Medicinal agents.

1. Convalescent serum. The use of encephalitis convalescent serum has been recommended by Stern in lethargic encephalitis but has not met with favor because of the chronicity of the disease and its poverty in antibody formation. The use of poliomyelitis convalescent serum in epidemic encephalitis was first advocated by Neustadter in 1922, who based his work upon the fact that poliomyelitic convalescent serum appeared to protect monkeys from experimental inoculation with encephalitic veins. My own experience dates from my first contact with an acute case of Type B encephalitis in September, 1932, in which I made a diagnosis of polioencephalitis and used polioencephalitic convalescent serum in its treatment. The results were so satisfactory that I continued its use in our present epidemic with equally good effect. The method is simply that if giving 80 - 100 cc of convalescent serum intramuscularly in two doses a day apart as near the onset of the disease as possible. Whether larger doses would be preferable I do not know.

It is granted that no certain proof of the efficacy of this treatment can be established. Besides the clinical evidence and the fact that the serum seems to have protective influence in animal inoculation I was told recently by Dr. Rosenow that poliomyelitic convalescent serum aglutinates the diplococci which he has been able to isolate from the spinal fluid of every acute case of type B encephalitis and from the brains of fatal cases. The specific etiology of epidemic encephalitis is as yet unknown and until it is known we must remain in the dark as to the specificity of treatment. From the results I and Dr. Bennett have obtained I do not hesitate to recommend its use in epidemic encephalitis.

In fourteen cases of epidemic encephalitis treated by the use of convalescent poliomyelitic serum with and without glucose intravenous injections there were no deaths and the results were prompt and striking. Whether a larger number would continue to show such a low mortality as against the reported twenty per cent mortality as noted in St. Louis I cannot say but I am sure it would not be that high.

Besides poliomyelitic convalescent serum we have Rosenow's anticephalitic immune horse serum and Gay's herpes virus vaccine with which I have no experience and which are as yet in the experimental stage.

2. Foreign protein shock therapy has been warmly recommended to increase the production of antibodies. My own experience here is limited to the use of normal horse serum which I have employed in vaccinal encephalitis with good results, giving 30 cc intramuscularly every other day. Essence of turpentine to produce a sterile abscess; typhoid vaccine or milk injections may be used for the same purpose.

3. Medical agents. Von Economo emphasizes the value of iodine in epidemic encephalitis believing that it has a direct influence upon the assumed nonfiltrable virus. He recommends intravenous injections of Pregl's solution, 100 cc or the same quantity of ten per cent solution of ten per cent sodium iodide. Riley in reviewing the treatment of encephalitis of epidemic type suggests large doses of sodium salicylate 100 grains in starch enemas. Alkalies in the form of sodium citrate and sodium bicarbonate aa grs XXX t.i.d. are, I believe, of value.

Other remedies such as collargol and acriflavine have been recommended but in my opinion are of doubtful value and unnecessary.

Besides the treatment directed specifically against the morbid pathological processes mentioned, general measures of treatment are necessary. The fluid intake and nutrition must be adequate and the patient must not be allowed to be dehydrated. At least 3000 cc of fluid should be given daily either by mouth or hypodermoclysis. The nutrition should be liquid, consisting of milk, broths and fruit juices.

The patients must be kept quiet and disturbed as little as possible. Sedatives should be avoided and the cool wet sedative pack employed instead if necessary. Convalescence in bed should be prolonged to allow the fullest opportunity for restoration of damaged nerve cells.

ROSTER OF OFFICERS—1934

Adolph Sachs, Omaha, President	1933
Joseph Bixby, Geneva, President-elect	1934
George L. Pinney, Hastings	1935
William Shepherd, Rulo	1935
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1936
W. R. Boyer, Pawnee City, Chairman	1936
R. J. Lehnoff, Lincoln	1936
E. L. Brush, Norfolk	1936
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1933

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
E. G. Zimmerer, Chairman Medical Section	Lincoln
Morris Nielsen	Blair
W. J. Arrasmith, Chairman Surgical Section	Grand Island
J. W. Duncan	Omaha

ENTERTAINMENT COMMITTEE

Dr. Harry Taylor, Chairman	Lincoln
Dr. Chas. Arnold	Lincoln
Dr. Roy Whitham	Lincoln
Dr. A. D. Munger, Chairman Exhibitors	Lincoln
Dr. Harold Morgan	Lincoln
Dr. George Misko	Lincoln

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
A. E. Buchanon	Fremont
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

THE NEBRASKA STATE MEDICAL JOURNAL

SUUM CUIQUE
1868
1903

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. 19 Norfolk, Nebraska, September, 1934 No. 9

CONTENTS

Page
What Does a Primary Tuberculous Infection Prevent?, Chester A. Stewart, M. D. 321
Federal Funds For Physicians Rendering Services to the Indigent, B. F. Lorance, M. D. 325
Pulsion Esophago—Pharyngeal Diverticula, W. J. Arrasmith, M. D. 330
Idealism in the Medical Profession, Edmund G. Zimmerer, M. D., F. A. C. P. 333
Abdominal Hodgkin's Disease: Case Report, J. Marshall Neely, M. D. 336
Thyroid Disease Complicated by Pregnancy, Harry Evans Harvey, M. D., George W. Covey, M. D., and Clayton Andrews, M. D. 339
Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 343
Discussion to Dr. Rowe's Paper on the Status of Irradiation of Living Tissue, in the July Number 346
Electric Arc Welding—An Etiological Factor in Aplastic Anemia, O. C. Nickum, M. D. 347
EDITORIAL— Page
The Problem of the Inebriate and of the Drug Addict in Nebraska 350
The Family Doctor and the Changing Order: President's Address 351
About Vitamins 352
Declaration of Policy of the House of Delegates of the A. M. A. 353
A Dart at A. M. A. Leadership 353
Rosenow Serum in Infantile Paralysis 353
Why An Auxiliary? 354
Homeopathy, Allopathy 354
Editorial Paragraphs 354
Obituary 356
Nebraska Woman's Medical Auxiliary Health Education Outline 1934-1935 356
1934 Graduates University of Nebraska College of Medicine 357
Creighton University College of Medicine, Graduates, 1934, and Interneships 358
The Societies 359
Human Interest Tales 359
Books Received 360

WHAT DOES A PRIMARY TUBERCULOUS INFECTION PREVENT?*

CHESTER A. STEWART, M. D.,
Department of Pediatrics, University of Minnesota, and
Lymanhurst School for Tuberculous Children, Minneapolis,
Minneapolis, Minnesota.

The first invasion of the human body by tubercle bacilli initiates a variety of complex changes, certain of which practically never fail to materialize in a very orderly fashion. and the constancy with which various preliminary events develop, results in the production of a fairly definite clinical entity designated generally as tuberculosis of the first infection or childhood type. This primary form of the disease proves to be a very mild condition as a rule. Its clinical significance resides mainly in that the resultant alteration it produces in the normal status of the tissues of the body provides pre-requisites indispensible for the development later in life of serious super or reinfection types of tuberculosis. The first infection form of the disease may be looked upon, therefore, as the introductory phase or stage of all the varieties of tuberculosis that occur in man. In a sense, the benign primary infection is the parent either directly or indirectly of phthisis, of miliary tuberculosis, and of various other destructive forms of the disease. These destructive and often fatal conditions may or may not materialize, however, dependent on the success with which contact exposure is avoided, or the escape of bacilli from pre-existing foci of disease is prevented by the defensive mechanism of the body. In order to clarify the rather revolutionary thesis outlined in these introductory statements, a concept of the successive phases of development through which tuberculosis passes in man is submitted for consideration.

The stage of primary tuberculosis that immediately follows the first infection is devoid of symptoms for a period of several days or a few weeks. During this prodromal or pre-allergic interval, however, important events occur featured mainly by a dissemination of tubercle bacilli from the site of initial implantation and their lodgment in nearby or remote lymph nodes particularly. The rapidity and the extent to which this dissemination occurs customarily in man is not known in detail. Working with experimental animals at the Mayo Clinic, Dr. H. S. Lemon has been able to recover tubercle bacilli from practically all organs of the body within a few hours after intra-pleural injections of the organisms. Considerable evidence is found in the literature which indicates that a very similar process occurs in man. For example, tubercle bacilli have been recovered recently from the gastric contents of many infected infants and children, and the presence of organisms in this location may antedate the development of fever, general symptoms, sensitiveness to tuberculin, and x-ray evidence of lesions. This entry of tubercle bacilli into the stomach doubtless enriches the possibilities for further endogenous dissemination of the organisms. Recently Bernard and LeLong demonstrated tubercle bacilli in the lymph nodes, liver, and spleen, of an infant who died of an acute gastro-intestinal disturbance previous to the appearance of a positive reaction to tuberculin. Animal experiments and observations on man, therefore, indicate that many if not the majority of the patients who are sensitive to tuberculo-protein harbor numerous subsidiary foci of primary disease derived by metastasis from single or multiple parent lesions located at points where bacilli were originally implanted. In accordance with this concept of primary tuberculosis and regardless of whether x-ray films are negative or not, patients who are allergic to tuberculo-protein may be considered as having experienced in general but to variable degrees, what virtually constitutes a mild miliary or disseminated form of tuberculosis of first infection which the normal defensive mechanism of the body fortuitously brings under satisfactory control in the vast majority of cases. The migration or dissemination of tubercle bacilli throughout the body during the pre-allergic stage of primary tuberculosis and the resultant production of multiple areas of primary disease provide very important reasons which justify one in questioning and even doubting that a patient derives protective benefits from the first infection commensurate with the liabilities involved. May I submit this query for your reflection: Does the seeding of tubercle bacilli throughout the body establish foci of disease that will remain under control throughout the remainder of the patient's life, or will bacilli escape from these areas of disease in time and give rise to tuberculous meningitis, bone and joint tuberculosis, miliary tuberculosis and destructive tuberculosis of various viscera? May I also ask, does the first infection prevent or make possible the development of the serious conditions mentioned above?

---

*Delivered at the Annual Dinner of the Nebraska Tuberculosis Association, Lincoln, May 22, 1934.

After a period of several days to a few weeks has elapsed post-dating the first infection, cutaneous sensitiveness to tuberculin and clinical manifestations appear, and in a minority of these cases roentgenographically demonstrable primary lesions develop. When x-ray surveys are conducted on a large series of tuberculin sensitive children, the chest films are found normal in about 50 per cent of the cases (figure 1). Definite and conspicuous shadows deemed typical of tuberculosis of first infection but probably representing in such cases only a fraction of the pathology actually present are discovered roentgenographically in about one-fourth of the infected children studied routinely. In this group, occasional patients are found with fresh pneumonic infiltrations, representative of the earliest phase of primary pulmonary tuberculosis grossly recognizable during life. These primary parenchymal consolidations may be situated in any portion of the

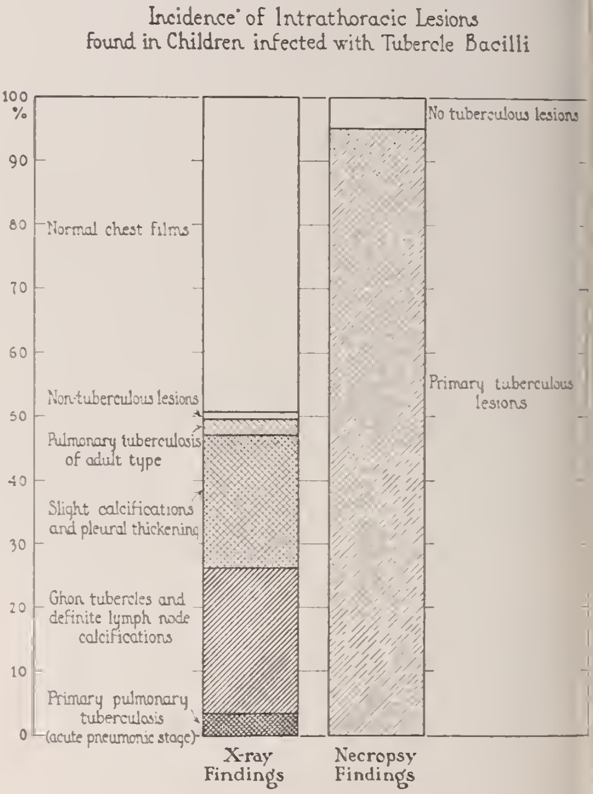


Figure 1

lung and may be unilateral or bilateral. In an occasional case of this type, cavitation is revealed by the film. Indisputable proof of the tuberculous origin of these lesions has been obtained in a few instances on lung puncture by means of which tubercle bacilli were recovered from the periphery and also from the center of the involved areas. In numerous other cases, circumstantial evidence showing the infiltrations to be tuberculous resides in the isolation of tubercle bacilli from the gastric contents; in the demonstration of skin sensitiveness to tuberculin; and in the course of the disease.

Serial x-ray studies on patients with conspicuous fresh pneumonic infiltrations typical of the earliest demonstrable stage of primary tuberculosis, disclose the development of the disease in the human lung, and portray on a large scale, the general process of evolution through which all primary tuberculous lesions usually pass regardless of their size and irrespective of their location. Follow-up studies of this character reveal that after remaining dormant for several months, the consolidations begin to resolve slowly. In time lesions, with or without cavities. either disappear completely or are reduced to fibrotic or calcified scars. The number of reported cases illustrating this phenomenon is sufficiently large to identify the process of retrogressive resolution as an outstanding and strikingly constant characteristic of tuberculosis of first infection. In general about two years are required for the complete reduction of pneumonic appearing lesions to permanent grossly quiescent scars, and during the interval these reparative changes are taking place, the patient usually manifests no evidence of illness. Occasionally transitory acute symptoms are present in the early stage of the disease, but more often no noticeable impairment of health accompanies the continued presence over months of extensive lobar infiltrations. The condition needs no particular therapy aside from temporary bed rest during the period symptoms are present. When the acute manifestations have subsided, the confinement to bed may be terminated, and normal activities may be resumed months before the pulmonary consolidations resolve. A well balanced diet, ample rest, and proper clothing should be provided. The most important single item in the therapy of primary tuberculosis with or without extensive lesions is the prevention of further infection. Summer camps, preventoria and open window schools are not needed for the treatment of tuberculosis of first infection. In June, 1934, the Lymanhurst school was closed permanently in recognition of the fact that schools of this character devoted to the care of infected children can be dispensed with. These cases recover if given simple home treatment in a tuberculosis free environment.

TABLE I

ANALYSIS OF RECORDS OF 84 CHILDREN WITH PHTHISIS

No. of Cases	Average Age	Tuberculin Reaction	First X-ray Examination	Later X-ray Examination	Interval Year
Cases With Negative Tuberculin Reaction and Chest Plate But Later Had Phthisis					
4	17	Negative	Normal	Phthisis 3 Mod. Adv. 1 Far Adv.	6.6
Cases With Phthisis When First Examined, But No X-ray Evidence of Primary Tuberculosis					
19	13.6	Positive	3 Incipient 10 Mod. Adv. 6 Far Adv.		
Cases With Primary Tuberculosis and Phthisis Co-existing When First Examined					
25	13.0	Positive	16 Calcified Glands 9 Ghon Tubercles 14 Incipient 10 Mod. Adv. 1 Far Adv.		
Cases With Primary Tuberculosis Exclusively on 1st Exam. Who Later Developed Phthisis					
36	12.4	Positive	9 Normal 14 Calcified Hilus Glands 13 Ghon Tubercles	16 Incipient 13 Mod. Adv. 7 Far Adv.	3.6

The abundance of cases reported in the literature in which the resolution of extensive parenchy lesions of primary tuberculosis has been witnessed provides indisputable proof that infants and children are remarkably resistant to tuberculosis when the disease is first acquired. Almost without exception, the primary lesions are brought under control in a very satisfactory manner. Many experienced clinicians feel that patients who have experienced an initial infection and are allergic to tuberculo-protein are more resistant thereafter to tubercle bacilli than are uncontaminated non-allergic individuals. Probably the majority of physicians consider a positive tuberculin reaction preferable to a negative one. Important facts have been uncovered recently, however, which throw considerable doubt upon the advisability of entertaining and adhering to these opinions.

A recently reported analysis of follow-up studies conducted at Lymanhurst on a large series of children indicates very strongly that an initial infection with tubercle bacilli is a detrimental and hazardous liability rather than a beneficial and protective asset. In 36 cases included in a group of 84 children with the super-infection or adult type of pulmonary tuberculosis (table 1), the development of this previously non-existing destructive process post-dated by 3.6 years the known presence of tuberculosis of first infection.

Forty-three per cent of the consumptives found in a series of over 10,000 children examined at Lymanhurst, therefore, provides indisputable proof that an antecedent infection and presence of sensitiveness to tuberculin failed to prevent the development of phthisis. Pulmonary tuberculosis of the adult type was found co-existing with conspicuous calcifications deemed characteristic of primary tuberculous lesions in an additional 30 per cent (25 cases) of this series of 84 consumptives. Evidence is found, therefore, in a combined total of 73 per cent of the entire series that the initial infection failed to prevent the development later of phthisis. Since the study of this series of cases was published, we have seen several additional tuberculin sensitive patients develop phthisis. The continuance of the follow-up study has firmly convinced the Lymanhurst staff that the initial tuberculous infection which renders the tissues allergic to tuberculin actually provides the pre-requisites indispensible for the development of phthisis. We have seen many uncontaminated children acquire the first infection during the period they were under observation, but have never witnessed the development of pulmonary tuberculosis of the adult type as a direct and immediate result of this experience. According to our observations, the acquisition of a positive tuberculin reaction by an individual who previously was non-allergic has resulted regularly in the development of the benign primary form of tuberculosis which in a few instances was accompanied by the appearance of parenchymal infiltrations that later resolved. The failure noted in these cases for phthisis to develop as the immediate and direct result of first infections with tubercle bacilli, is in agreement with the general observation that the progressive adult form of tuberculosis is rarely seen in the first ten years of life during which period large numbers of children experience their initial infection. Doubtless, therefore, the appearance of the incipient stage of phthisis always post-dates the partial or complete evolution of the primary form of tuberculosis and never develops until after the normal immunologic status of the tissues has been altered by an antecedent primary infection. Furthermore, the mild retrogressive calcifying primary type of tuberculosis does not arise the second time in the lungs of children who are already sensitive to tuberculosis. Apparently man can experience and resolve the benign primary form of the disease only once. Thereafter, if new tuberculous pulmonary lesions develop they regularly run the course characteristic of the progressive, destructive and toxic super or reinfection forms of tuberculosis.

As observed at Lymanhurst in cases subjected to serial x-ray studies the earliest discernable stage of pulmonary tuberculosis of the adult type makes its appearance in tuberculin sensitive children as newly developed soft infiltrations located in the subapical portion of the lung particularly. The onset of the disease may post-date the primary infection one or many years, and may occur in any decade in life. After remaining dormant for months or a few years without producing symptoms or physical signs, the new infiltrations often begin to enlarge and spread, and continued progression of this process combined with increasing necrosis and cavitation leads ultimately to far advanced disease. The stages of development through which phthisis ordinarily passes are characterized mainly by progression of lesions and increasing necrosis. This progressive and destructive process stands in sharp contrast with the retrogressive and reparative evolution typical of primary tuberculosis.

The concept presented here relative to the evolution of tuberculosis in the human lung from the first infection phase to the final stage of far advanced phthisis implies that the first infection makes possible rather than prevents the development of the adult type of tuberculosis. When we consider other serious reinfection forms of the disease such as miliary and bone and joint tuberculosis, tuberculous meningitis, and destructive tuberculosis of various viscera, these serious conditions which develop as the result of the discharge of bacilli from pre-existing primary foci of disease, are seen to be caused often by the dissemination of direct descendents of the initial infective dose of tubercle bacilli that entered the body. According to our experience at Lymanhurst, there is no form of tuberculosis to which man is susceptible that is prevented by the first invasion of the tissues by tubercle bacilli. In fact, our experience forces us to believe that the primary infection is the first step along the path which leads too often to the development of all the serious reinfection varieties of tuberculosis that menace the human race. When Lymanhurst opened thirteen years ago, the staff looked upon children with positive tuberculin reactions and x-ray shadows of well calcified lesions as immunized against tuberculosis. This opinion led us frequently to assure patients they were protected against the disease. Later, however, when we witnessed the development of phthisis in increasing numbers of cases recruited from the group originally considered immune to the disease, our original conceptions relative to the protective immunity conferred by a primary tuberculous infection were reversed by practical experience. As a result of several years study, thereore. the Lymanhurst staff considers a negative uberculin reaction superior to a positive one, and ooks upon the non-allergic, uncontaminated inlividual as occupying a more advantageous posiion than is possessed by infected patients insofar s future experiences with tubercle bacilli are oncerned. In conclusion, the prediction is ventured that in the near future an initial infection with tubercle bacilli will be generally accepted as a hazardous liability rather than a protective asset, and a deeper appreciation will arise relative to the soundness and value of campaigns fostered by national, state, and local tuberculosis associations directed toward the prevention and control of tuberculosis.

FEDERAL FUNDS FOR PHYSICIANS RENDERING SERVICES TO THE INDIGENT*

B. F. LORANCE, M. D.,
Auburn, Nebraska.

Doubtless, many of our members upon first thought, might question whether a paper with the title as announced, should be given a place on a program where only scientific subjects are usually discussed. Yet, careful thought should lead anyone to the conclusion that this proposition of the federal government to provide funds to recompense physicians for services rendered the indigent, touches our profession at its very heart, and, through our profession becomes of vital concern to every citizen in our land.

That this question is of moment is attested by the fact that it has received attention by the higher officers of our organization in many of our states. That the proposition has not met with universal approval by the rank and file of our profession is evidenced by the general indifference, as well as the decided disapproval shown in many quarters.

In our own state, while our board of councilors unanimously endorsed the proposition, some of our county societies quite forcefully rejected the proposed plan. I might say that the Nemaha County Medical Society, at its meeting held last January 23rd, all members being present, twelve, unanimously rejected the proposition, a number of our members expressing antagonism of a pronounced type. As I analyze this proposal of the federal government to provide funds to recompense members of our profession for services rendered the indigent, it is questionable whether there are any good reasons why our profession should accept the proposal, and many reasons why the proposal should be rejected.

In this connection, it might do all classes of our people some good to stop a bit and consider the hardships born by the early pioneers of this country. When our forefathers landed at Plymouth Rock and Jamestown, they faced almost impenetrable forests, savage Indians, wild beasts, and the rigors of an inhospitable climate. Among those early pioneers there were members of the medical profession who did their full share in the great conflict by ministering to the sick and afflicted. Those forefathers faced their problems, conquered every obstacle, and, in so doing they developed the physique, the spirit, and the character which gave us George Washington, Thomas Jefferson, James Madison, and other mighty men who had the genius to write the Declaration of Independence, the hardihood to break the yoke of a tyrant, and the brains to pen the greatest document ever produced by the mind of man—The Constitution of the United States. Our rugged forefathers penetrated the forests, and their descendents forged their way over the mountains and into the great central plains to give us other mighty men, among them the great Abraham Lincoln, born in a log cabin with a dirt floor.

My memory does not go back, of course, to those very early pioneer days, but I was ushered into this life on the frontier, long enough ago that I was a voter, probably, before anyone in this audience was born. My parents tell me that the physician who rendered the necessary service at the time of my birth, came in the dead of the night, on horseback, fording a stream of water which almost caused his horse to swim part of the way. And America has always had hosts of medical men made of just such sterling stuff.

It would seem that the higher authorities who formulated this proposal of the federal government to recompense physicians for services rendered the indigent, did not have a very clear concept of the material of which the members of the medical profession are made. They seem to have assumed that physicians are selfish and quite mercenary in their make-up, and that they might not render necessary and adequate medical service unless assured of their pay, and, for that reason there might be suffering among our unfortunate classes. Here, those who sponsored this proposition were wrong, as the members of our profession must know. Probably there is not a physician in our nation, today, sixty-five years old, who has not many times in his life gotten out of bed in the dead hours of the night to travel over almost impassable roads, in a blinding blizzard, to visit some sick person, knowing full well at the time that he never would receive a penny for his services.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, May 22-24, 1934.

Again, our nation, today, is groaning under the staggering debt burden of some thirty billion dollars—a burden which is increasing at the rate of ten million dollars daily. This debt must be paid some time by our posterity. Conscious of this crushing financial load under which our children, and our children's children must toil for generations to come, could we, the members of the medical profession—most of us today enjoying the comforts of modern civilization—could we hold up our heads while we reach out our hands to accept money from the federal government to recompense us for rendering medical services to our neighbors, the indigent poor?

My grandfather, a pioneer physician in the mountains of eastern Tennessee, went to his reward more than a century ago; and I feel that I, his grandson, would not be showing proper regard for the memory of this worthy sire, who must have suffered many hardships in those early days, should I take money from the federal government for rendering medical services to my indigent neighbors.

Most counties in the United States should be able to bear their own burdens, even as to the matter of caring for their sick indigent poor. I am familiar with the procedure in one or two counties in our state in the matter of caring for sick poor people who may need medical services. The following is the plan with which I am familiar: Any indigent sick person, may have the facts of the case made known, either to the county attorney, or to the county commissioner having jurisdiction in that part of the county where the patient may reside. This having been done, the official to whom the appeal is made thereupon orders a physician, usually the county physician, to render the necessary service. The charges for such work in the counties with which I am familiar, are one-half the charges usually made by physicians, the county, of course, paying the bill, not in the form of a salary, but only for services actually rendered. I am not familiar with the methods used generally in other states, or even in our own state in the matter of caring for the sick indigent poor, but it would seem that it might be well that every county should adopt some such plan as the one here alluded to.

Then, we have in this state, our State University hospital to do its part in caring for indigent medical and surgical cases.

With this line-up in our state, and the same condition exists in every state, there should be little need that the federal government be allowed to step in. Yes, most counties in the United States should be able to bear their own burdens, even in the matter of caring for their sick indigent poor; and, it is only by so doing that our independence and self-respect can be retained and our rugged manhood perpetuated.

Within this year, our federal government, ostensibly with altruistic motives, has offered much help to many of our industries, notably, the cotton, the wheat, and the corn-hog industries, as well as to our laboring classes. Since like aid has been profferred the medical profession by the federal government, even to the extent of fixing a fee schedule, might it not be well that we all strain our vision in an effort to see the end, and try to muster up enough self-respect and sterling character to reject this proposal, which, though dressed up in an attractive garb of altruism, might, if accepted, result in the regimentation and the communizing of the medical profession. At least it seems clear that this movement is a tendency in the direction of communistic or state medicine.

With the spirit of Charles The First now nesting in high places in this country and hovering over our land—the spirit which brought into English history John Hampden and Oliver Cromwell—it certainly behooves all classes of our people to consider most carefully all proposals before voluntarily accepting any plan.

If ever this nation needed men with red blood, courage, clear vision, stout hearts, and straight strong backs such as possessed by the fathers of old, it certainly needs them today.

It does seem that the medical profession, though sorely pressed, financially, as it certainly is just now, has, in this matter, an opportunity to demonstrate its worthiness to hold the esteem of our people, by standing upright and aloof while refraining from accepting this proposal of the federal government to recompense us for services rendered the indigent.

Yes, let the medical profession furnish its full quota of rugged manhood to march into this bemuddled bog of depression to battle for the right. By all classes of our citizens using clear heads and manifesting sterling courage. we may soon all be able to sing in truth, this is still the land of the free and the home of the brave.

It is just possible that some of our able critics are correct in their views when they tell us that this great American nation is now decadent; that it already has entered its decline, and, that, unless we quickly about face and revert to the doctrines of our fathers our final doom is certain; that, if final extinction should be our fate, the historians who may make up the records a few thousand years from now, will date the beginning of our downfall in this era in which we swerved away from the doctrines of the fathers who gave this nation its birth, and suffered our initiative to be stifled, our characters to be dwarfed, and our entire social structure to be enfeebled by over much federal aid.

In ancient history there was a time, as recorded by the prophet, when an angel of God, contemplating the degenerate condition of a once great people, cried out in anguish, "Woe, woe, woe to the great city, Babylon."

In the history of any people, if ever the national morale—the national concept of what is right and just—shall become so enfeebled that those in authority may be able to procure the good will and support of the citizenry—physicians, cotton farmers, wheat farmers, corn-hog farmers, and the laboring classes—while the purchase price must be money obtained by placing in bondage unborn generations to sweat and toil under the crushing load, then, surely, will the hosts from high heaven cry out in one long lamentation. "Woe, woe, woe to that nation."

In conclusion, I would have it understood that, as a physician, interested in the spiritual as well as the physical welfare of my fellow Americans, I hold to the view that this great nation—the greatest in history—has been builded into its present magnificent structure by each individual standing upright and alone, while bareing his back to all burdens; that it is only by such a course that any nation can build up rugged manhood and endure permanently; that over much federal aid is effeminating, destructive to all that is noble in manhood, and, therefore, to be strenuously avoided except in the direst necessity.

From this viewpoint I am here pleading that the brain, the brawn, the individual vigor, and the moral fiber of our illustrious forefathers may be conserved and perpetuated—not strangled by the doctrines of the communist, whether that communist be a red orator on a soap box in the street, or whether he be found in the highest circles of those in authority.

DISCUSSION

DR. A. A. CONRAD, (Crete): Perhaps there are differences of opinion arising in different portions of the country. The men in the city are probably up against a more serious thing than we fellows in the country. You can get a side of bacon or a quarter of beef or a load of cobs or something, if it happens to be a farmer who can't pay, unless he lives in that part of the country attacked by grasshoppers. In the city, a great many of the indigent have nothing with which to repay the physician.

Personally, it burns me up to have the government offer to pay such a niggardly wage for calling on a sick individual. I would rather stand on the precepts of the medical profession who have given this service and been glad to give it, rather than to come in as a panhandler on the street. The government has handed out millions of dollars to farmers and workmen in the shape of C.W.A. funds. Then they come along and give us—I don't know what to call it. I don't think it would sound well in a group like this.

I am glad that during the last four years I have not been located in a city. I think I have come less close to starvation where I was, and where I hope to be. We don't have so many indigent in our district, and the county situation is very much like that of Dr. Lorance's county. They will pay something, if necessary, where the cost of sickness is going to be too much of a load for the doctor. We find the county commissioners have had to guard against excessive charges. Some of the doctors have been padding their expense accounts. If we are going to be taken care of to a certain extent by the county commissioners, we should be square in our dealings with them, and we will have very little difficulty.

I believe instead of its care of the indigent, the United States government should put through a law requiring everybody who drives an automobile to have public liability and property damage, so that the hospitals and physicians would not have to carry millions of dollars of expenses of those accidents. A fellow who can drive around and have a good time ought to pay for attentions after being injured.

The fees that are offered are an insult to the medical profession. I much prefer to take care of my poor, and let them understand that if they ever get enough, they are to give me some of it. From our experience the last four years, these people whom it has been hard to induce to take aid from the Community Chest or county or city, after they get a little bit of it, will soon become grabbers. They want everything given to them. We will make the people of the United States a bunch of beggars if we will pass out government dole to those people who think they want it.

DR. RUDOLPH F. DECKER, (Byron): Thayer is one of the counties in which the C.W.A. or F.E.R.A. has offered this schedule of medical fees. Probably you are all familiar with what they pay—one dollar for a visit in the country plus five cents a mile. At a meeting in Hebron in March, when all members of the profession were present, the matter was turned down. We decided we would do outright charity, as we have done all these years, rather than accept a fee which was utterly inadequate.

There is another thing in connection with accepting fees of that kind. The tendency is and has been in our county that the commissioners of the county have taken this attitude: "If you men accept one dollar for a visit, plus five cents a mile, we do not see why we as a county should pay any more."

Another thing that made me feel we would rather do outright charity than to take a fee which was utterly inadequate was, for instance, the attitude taken by the C.W.A. in offering men in small towns forty cents an hour. I know from personal experience men have earned $12 a week—$50 a month. After two payrolls at forty cents an hour had been paid and the men went to Hebron to get the next payroll, they were told they wouldn't pay forty cents an hour: that they must accept fifty cents an hour, when these men would have been glad to work at thirty cents.

To the laborer doing ditching on the street, forty cents an hour was perfectly satisfactory; but they were told they must take fifty cents. To us they have said, "You must travel at five cents a mile." Those are some of the reasons our county medical society turned down the proposition. We would rather select our own charity cases.

DR. B. R. McGRATH, (Grand Island): This proposition was also turned down in Hall county, as in practically all of the counties of the state, because it looked to us like putting the control of the medical profession into the hands of the laymen. It is an entering wedge for the socialization of medicine. Unless we are going to completely socialize the entire system, we do not feel we want medicine alone socialized.

Men have come to me to arrange for an operation and have cried bitterly because they were not able to pay cash as they always had been doing. In this emergency they were not longer able to pay cash. On inquiry, I would find they had property—were farmers, and had stock and some grain. Conditions were such they were not able to raise money. What would a sympathetic social worker do under those conditions? The tendency of the worker would be to say, "I will provide your medical and surgical service. No need of worrying about this."

We feel we would rather deal with those people directly. Perhaps they will be able to pay some time. If they don't we want them independent, as we want to be independent.

The president of the American Medical Association said last year, in discussing this proposition, "When medical services are controlled by laymen, 42 per cent of the money collected goes to the laymen."

That is the propostion we are up against in this emergency. If we have this controlled by the government, it is only a step to continue these organizations that will control medicine, the laymen who control the organization will take 42 per cent. and leave the rest to the physicians.

We realize that a great emergency exists, but we do not feel that medical service has broken down in the emergency. We have always done charity work in medicine. The present demand for such service varies only in degree from what we are accustomed to in normal times.

DR. B. F. BAILEY, (Lincoln): I come of old New England stock. I know all about this. We are in an emergency at the present time most of you know nothing about. The men in some of our counties do know something about it. They did not tell us they didn't want state medicine. I have a letter from the chairman of emergency relief who was seriously injured the other day, in which he says the Nebraska State Medical Association will come forward with a plan. It is not a question where they said, "You treat these cases for these fees." They were willing to divide it.

You talk about the government giving you your pay. You are paying it. We will pay for all these debts made at the present time—every one of them. They demand that the counties and municipalities are taken care of by those people who shoulder the local responsibility. Lancaster is one of those counties that has no money.

They are not saying what fees we should charge. They say that is all they can give. They are paying not five, but twelve cents a mile. They are dividing your regular fees in half. They want to come to a point where it is not a question of anything except that our poor shall not suffer. I think this profession is big and broad enough and has vision enough so that we do not care who does it, so long as our poor are taken care of and our people are saved.

Don't worry about state medicine. If there is danger in state medicine, it is because we do not do what we can to help care for this emergency.

I do not believe any man has done more charity than I have. On the other hand, we cannot carry it all. It is out of the question. I know of doctors' families who have had to go on relief. They have relieved the sufferings of others until they had not anything left to buy food. I want to see us begin something effective. The national emergency people have not so much interest in what is paid. They want to be sure those people are taken care of.

It is God's work. If you want to do it for nothing, don't ask for pay. They have just this much money appropriated they can use. They are not seeking state medicine or the socializing of medicine, but they are seeking a certainty these poor shall be cared for. If we can forget both this fear and this idea we are being imposed upon, and think only of those people not having what they need, and cannot have it, we can do something; and they are doing it through these agencies.

For heaven's sake, let us not criticize the government for trying to do these things in these times of emergency! We must pay these debts by and by. The government is doing the best it can. I am going to be frank. This is a democratic move and I am a republican. I ought to disagree.

The first thing is attention to those who are suffering. Suppose it were your father or mother or sister or brother. Have them taken care of. If you want to do it for nothing, God knows it is a blessing to the profession. If you are needy, you receive something for it. If you want the government to appropriate more, go to your representatives in Congress.

DR. JOHN BUIS, (Pender): I should like to ask one question. I would like to know what the salary of the federal relief worker is compared with the income of the doctor?

DR. BAILEY: I understand it is $200 a month.

DR. BUIS: We have a man in our county, Thurston, who gets a salary of $150 or $200 a month. I was rather amazed some time ago. I was asked to see an indigent working for the county. I went. I was given a slip and requested to sign it, and I had to. It came back; went to Lincoln, and came back again. I had to send it to have the man sign again. It came back again with another signature. In the meantime, I had the work and the expense, and there was eighteen cents in postage. I got a notice they couldn't pay the dollar, so I threw it in the wastebasket. It was worth a dollar to get the experience.

Two weeks age I had a boy sixteen years old, seriously sick. These people are hard-working people. I have always taken care of them. The wife of the district judge went to see this relief case—she is the president of the Woman's club in the town—to see if they could do anything for this man and his family. The first thing this relief worker said was, "Is that doctor capable of giving an intravenous injection?"

These people didn't know. He said, "In the army we did that. There is no doctor in these small towns who can give intravenous injections."

That was one of the first things we had to contend with with these federal relief administrators. Next year it will be a little bit worse. These administrators will step on us every day. It will be, "Can you give a hypo? Can you tell someone how to make a mustard plaster?" These are the things we will contend with.

As far as our relief distributors are concerned, they don't work for a niggardly sum. That man didn't have a job. He got his job from the government. I refer to Mr. Churchill of Thurston county. He drives an automobile. He has three stenographers in his office. My office girl can do as much in one day as his three stenographers in a week.

These are the problems we will meet. What did the local attorney do? Every one of them has some little graft from the government he is getting pay for. He gets pretty well paid. The engineers are getting well paid. Every profession is getting paid. Take your politicians and bankers, and they have made a failure. Medicine is the only profession that stands out as a beacon light which people can trust and say it is a profession that will stand by the people.

Personally, I think it is wrong to accept relief from the federal government. I will take care of my people. When they haven't anything left, I will share with them what I have, and I believe they will still do the same thing with me.

DR. BAILEY: Regulation No. 7 says they can have any physician they care to call.

We think "We are the people." There are some other honest people besides ourselves. Mr. Haynes is one of them. When we malign these people, we are maligning our own government.

DR. BUIS: We had a local committee appointed in the county to look after these people. He said, "You dumbheads don't know anything about taking care of these people."

DR. BAILEY: I would like to have that under oath. No man in the employ of the federal government would be allowed to use that language.

DR. BUIS: He used that language to one of the best business men in Pender.

DR. BAILEY: I don't stand for anything of that kind, but I will stand for my profession and my country, and I am sure there are others besides ourselves who will play fair and are trying to do right by our people. We don't want to be too shortsighted. I may say this: There is scarcely a county in this whole state that is doing its duty. One reason they can't is because they haven't the money. We must see to it the legislature makes it mandatory for each county to take care of its own poor, and the government won't have to. Then stop bidding to commissioners of towns and cities at the lowest rate, having it go to the lowest bidder. This is a caution. It isn't a demand.

DR. HOMER DAVIS, (Genoa): Dr. Lorance, in the paper he has just read, has stated that the Board of Councilors at their January meeting, passed a resolution recommending the Nebraska State Medical Association to accept the offer of the Federal Relief Administration for medical service to the indigent poor. I want to say in defense of the councilors that none of the councilors were really in favor of it. The question was discussed in the councilors' meeting thoroughly and with a lot of vigor, and they were almost unanimously against any dictation by the Federal Relief Board as to fees.

The Board of Federal Relief is composed of several members. We have two physicians on that board. One of these physicians appeared before the councilors and said that if the councilors turned down the offer entirely, it gave no chance to those places where the people were really in distress—where the physicians were practically in distress also. This refers principally to northern Nebraska, with no cash income for physicians.

The resolution was adopted so that it would leave the decision up to each county as to whether or not it would go on the schedule for federal relief.

What was done in Dr. Lorance's district, which is prosperous, does not pertain to the northern part of Nebraska, which was in absolute want. Thus, you see, the problem is a local one, which was as the council saw it, and so decided.

The subject of fees was not settled by the council, but was left to your standing Committee on Public Policy and Legislation, of which Dr. B. F. Bailey, of Lincoln, is chairman. Probably Dr. Bailey can explain about the work that was done by this committee. This committee, I am sure, tried to get the best fee schedule possible. It has been suggested by Dr. McGrath that the result of this fee schedule is a question of laymen telling the doctor what he should accept as a fee. You have this manifested in the schedule of fees that has been published in the Journal. Personally, I do not like such dictation, and accept it only as an expediency in the emergency which exists in our country today.

DR. LORANCE, (closing): Dr. Bailey, I was present when the men in our society discussed this proposition. I will say this: Every one of them had the most cordial feeling toward our board of councilors. We understood this was a voluntary matter. The board couldn't do anything else than just what our board of councilors did. It was a proposition from the federal government, putting out something to accept or reject as we felt like doing. Our councilors put that up to us, and we rejected it. We did it with a cordial feeling toward our board. No one assumes the federal government is trying to dictate to the medical profession what it shall do. Suppose the medical profession had done the other thing? It unanimously, almost, rejected it. No state society accepted it. The men in most county societies rejected it. Mr. Leland stated only one state took action, and that was Virginia, and it rejected it.

There is no unkind feeling toward any board of councilors or the government. We are loyal. If the members of this profession had accepted this proposition with this fee schedule, we would have had a band around our necks that would have strangled us to death. Our profession would have been communized. Possibly I ought not to use that term. The action of our medical men shows they have a vision to see the end. No greater question than that has come up before the medical profession. They treated it nicely, and unanimously rejected it.

Three professional men, a doctor, an engineer and a financier, were debating which of them belonged to the most honorable and ancient profession. The doctor said: "Mine is easily the oldest. Don't you remember that in the beginning Eve was made out of the rib in Adam's side? Well, there's a surgical operation for you." The engineer said: "Yes, but before that happened don't you know the world was made out of chaos in six days? Now there's an engineering feat for you." "Ah," said the financier "but who made chaos?"—Public Opinion.

"Do right and fear no man. Don't write and fear no woman."

PULSION ESOPHAGO—PHARYNGEAL DIVERTICULA*

W. J. ARRASMITH, M. D.,
Chairman, Surgical Section,
Grand Island, Nebraska.

Diverticula are found in various regions throughout the entire gastro-intestinal tract. These diverticula, with few exceptions, are composed of all coats of the intestinal tract from which they arise. On the other hand, diverticula at the oesophago-pharyngeal junction and in the colon are true herniations of the mucosa and submucosa, protruding through the outer coats of their respective organs. Why hernias occur in the two extreme ends of the gastro-intestinal tract is not wholly clear, although trauma produced by the contents of these organs is quite suggestive. The lower half of the colon acts as a drying oven and absorbs water from its contents until ultimately the sigmoid may be filled with hard particles of feces capable of producing injury to the bowel. The upper oesophagus receives food which has been masticated only; and with the sudden contraction of the muscles of swallowing, the bolus of food, often containing hard particles, is driven into the upper oesophagus with considerable force.

The oesophagus is a tubular organ composed of mucosa, sub-mucosa, and two layers of muscle. In its upper portion it is loosely attached to the surrounding structures by areolar tissue, to allow for expansion and upward and downward movements during deglutition. The outer or longitudinal muscle divides near its proximal end, forming two bands which run forward and upward to become attached to the cricoid cartilage, leaving a triangular area covered by circular muscle fibers. Just above this triangle the superficial constrictor and the lower, deeper sphincter muscles are found. These comprise the cricopharyngeus muscle (fig. 1).

Many of the earlier writers believed these pouches to be protrusions of the mucosa and submucosa through the triangle on the posterior wall of the upper oesophagus. Barclay(1) believes that in view of the movement of the upper oesophagus during deglutition, an adhesion between the cervical vertebrae and oesophagus might possibly explain their origin. After developing this theory, he requested one of his patients from whom a pouch had been removed to return for further study. He took roentgenograms of the cervical vertebrae and found evidence of disease which he thought might have been responsible for the formation of the diverticulum.

More recently Raven(2) advanced the theory that these diverticula are herniations of the mucous membrane of the pharynx between the two sphincters comprising the cricopharyngeus muscle; and that to describe them as "oesophageal" is erroneous. Incoordination between these sphincter muscles, each of which differs in its enervation, morphology and physiology, will cause them to separate and allow a protrusion of the mucous membrane to take place in the separation thus formed. Trauma, decrease in the elasticity of the muscle tissue, and other etiologic factors have been advanced to explain the origin of these pouches. But the theory proposed by Raven seems to offer the most plausible explanation to date.

These pouches almost invariably lie on the left side of the oesophagus; although, occasionally, one is found lying to the right. They vary in size and shape. Some of the largest will hold as much as sixteen ounces of fluid. The smaller are spherical in shape, and as they increase in size they become pear-shaped. In the smaller size the orifice of the pouch is on a horizontal plane with the dome, but as the diverticulum increases in size the dome falls downward, leaving the orifice on a much higher plane.

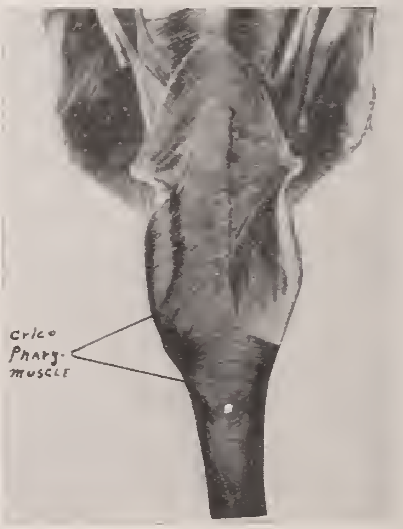


Figure I

The dot shows the point where the protrusion usually takes place.

They are rarely seen before the age of forty and show a preponderance in the male subject. These patients seldom seek relief until several veeks or months after the onset of the earliest ymptoms. These consist of dryness and a cratchy feeling in the throat, which are later acompanied by hawking and spitting of mucus. A ensation of pressure and of a foreign body are requent complaints. As the pouch increases in ize the symptoms become more pronounced. Regurgitation of particles of undigested food, foul reath, gurgling noise and obstructive symptoms, lue to tugging and pressure of the sac against he oesophagus, are typical.

---

*Surgical address, delivered before the annual meeting, Nebraska State Medical Association, Lincoln, May 23, 1934.

The patient soon learns that certain positions luring the act of swallowing will permit food to pass by the obstruction and enter the stomach. If the orifice of the pouch is so situated the diverticulum will progress in size until eventually it will distort the oesophagus in such a manner that semi-solids and liquids cannot be swallowed. Dehydration and weight loss become so marked that immediate relief is soon demanded.

The diagnosis is not particularly difficult if one bears in mind the history of such a lesion. An x-ray of the upper oesophagus will very quickly verify or disprove the assumption. Stricture and carcinoma of the upper oesophagus may produce symptoms closely simulating these pouches, and cases have been reported in which such lesions have accompanied diverticula. Where such a possibility exists an oesophagoscopy will be needed.

Unfortunately the greater part of the oesophagus is situated so deeply in the thoracic cavity that operations upon it are extremely hazardous and difficult. On the other hand, lesions involving its upper extremity can be approached through the neck with considerable safety and ease. There is no other surgical condition of the oesophagus which offers such an excellent opportunity for complete alleviation of symptoms and restoration of function as a pulsion diverticulum.

Back in 1877 Nicholadoni(3) recorded the first attempt to treat these pouches surgically. He established a fistula by opening into the sac. Seven years later Niehaus(4) removed the sac in a one-stage operation, but lost his patient. Wheeler(5) in 1886 was the first to successfully remove one of these pouches. Since that time the number of operated cases have gradually increased.

The one-stage operation, that of immediately resecting the sac and attempting to suture the opening, met with a high mortality. Owing to this fact, Girard(6) conceived the idea of inverting or plicating these diverticula. This method was elaborated upon by Bevan(7), who dissected the sac from its bed behind the oesophagus and in front of the vertebrae. A purse-string suture was placed around the neck and the diverticulum was inverted into the oesophagus. There it would atrophy or undergo sloughing and be discharged. Girard in his article mentioned one case in which sneezing caused the purse-string to break-loose, permitting a recurrence of the original diverticulum.

Goldman(8) in 1907 first conceived the two-stage operation. This was later improved upon by J. B. Murphy(9), C. H. Mayo(10), F. H. Lahey(11), and others. Recently Babcock and Jackson(12) have advocated a one-stage operation in which they stress the great care necessary to avoid trauma and the "finesse" of placing the sutures to close the opening in the oesophagus after cutting away the diverticulum. Both Lahey and Judd(13) advocate the use of the two-stage operation. All of these authors substantiate their arguments by large numbers of cases upon which they have operated successfully and without a mortality.

Oesophageal tissue, like all muscle tissue, tears easily; and it is extremely difficult to place sutures in this structure so that there will be no cutting or leakage in the suture line. In the one-stage plan leakage may take place before sufficient granulation has formed to wall off the operative area, thus allowing the contents of the oesophagus to gravitate down along the anterior portion of the vertebrae into the mediastinum, producing a severe infection which nearly always results in death. In the two-stage plan the sac is sutured to the prethyroid muscles. After sufficient granulation has formed to prevent leakage the sac is cut across. This plan may increase the hospitalization a few days but this is compensated for by the minimum risk involved in the operation. In a large series of cases it would be logical to believe that the mortality would be lower in the two-stage plan.

In the past, patients have been allowed to suffer over long periods with small pouches because it was thought that if the pouch could not be brought up to the skin it would be impossible to resect it with any degree of safety. In this type of case Lahey suggests suturing the dome of the pouch to the sterno-hyoid muscle with two black sutures and closing the skin. After granulation has formed, which takes place in eight or ten days, the incision is reopened; the sac is identified by means of the black sutures. It is then dissected free down to the oesophagus and removed in the usual manner.

Like most surgical lesions, it is good judgment to remove these pouches as early as possible. The possibility of obtaining a good result should be greater with a small sac than with one holding a pint of fluid. In the latter type the orifice of the sac is apt to be quite large and a diverticulum of this size is certain to cause considerable distortion of the oesophagus, both of which might interfere with the return of good function to the oesophagus.

Occasionally a debilitated, aged patient will require palliative treatment. In such cases the passing of sounds, always guided by a thread which has been swallowed and is well anchored in the bowel, will give relief. The sound will increase the lumen of the oesophagus and will overcome some of the existing muscle spasm. The patient should be instructed to empty the pouch before retiring to prevent aspiration of its contents into the lungs and to prevent choking, coughing, and other symptoms which would greatly disturb his rest.

Most patients do not require any great amount of pre-operative treatment. However, if there is obstruction, producing starvation and dehydration, the patient should be given nourishment through a stomach tube if possible, or through a gastrostomy. Intravenous and rectal routes should also be utilized to administer fluids and nourishment. By these methods the patient's physical condition can be improved and the risk of operation materially lessened.

The two-stage operation is my choice. I have performed it on two patients, employing the usual incision along the sterno-mastoid muscle. The sac was identified and sutured to the sterno-mastoid muscle. After granulation had formed the sac was dissected down to the oesophagus, cut across and sutured. There were no complications in either case. Both had an uneventful convalescence and obtained perfect return of the function of swallowing. My first case was reported to this society in 1924(14). Dr. G. W. Clark of Bertrand, Nebraska, referred the second case to me. Doctor Clark made a correct diagnosis without the aid of an x-ray.

The patient was a male 64 years old who complained of a chronic cough every winter for the past twenty-five years. The summer preceding his operation, however, the cough did not subside as usual. He expectorated large quantities of mucus but never any blood. Among his earliest symptoms he noticed a tickling and scratching in the throat at intervals. For the past five years there had been a tendency for coarse foods to lodge in his throat. He would, at times, cough up as much as one-half teaspoonful of undigested food. Later he coughed up liquids such as ice cream and malted milk. He never vomited. He was cognizant of a gurgling noise in his throat and of a foul breath.

There was a history of twenty-two pounds weight loss during the past two years. Many coarse rales were heard throughout the chest; otherwise nothing of importance was observed upon physical examination.

The urine had 0.9 and 0.7 per cent sugar on two occasions. The blood sugar was 128 mgs. per 100 cc. The sputum was negative for tuberculosis. The blood Wassermann was negative.

A roentgenogram of the chest showed marked bronchial infiltration with bronchiectasis. Fluoroscopy of the oesophagus revealed a diverticulum 4 to 5 cm. long, lying slightly to the left of the oesophagus. Oesophagoscopy showed a "dimple" on the posterior wall at the oesophago-pharyngeal junction.

The patient was given anti-diabetic treatment for seven days after which the urine was found to be free from sugar, acetone and diacetic acid. On August 27, 1934, the first stage operation was done, suturing the sac to the sterno-mastoid muscle (fig. 2.). Thirteen days later the sac was dissected down to the oesophagus, cut across, and sutured (fig. 3 shows the end result).

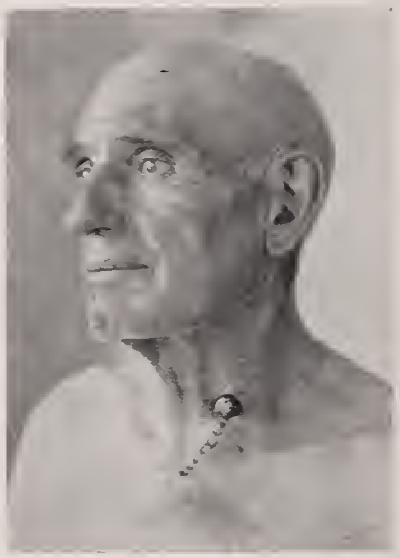


Figure II

A recent letter from Doctor Clark stated that the patient received perfect relief from his diverticulum and that he is enjoying good health for one of his age at this time.

BIBLIOGRAPHY

1. Barclay, A. E.: Origin of Zenker Pouch of Pharynx. Acta Radiol. 13, 87-90, 32.

2. Raven, R. M.: Correlation of Pathology and Radiological Appearances. Lancet 1: 1011-1015, May 13, 1933.

3. Nicholadoni, Carl: Wien. Med. Wchnschr. 27; 605, 1877.

4. Niehans (quoted by Girard): Cong. franc. de chir. 10: 392, 1896.

5. Wheeler, W. I.: Pharyngocele and Dilation of Pharynx. Dublin J. M. Sc. Series 3, 82: 349, (No 179), 1886.

6. Girard: Association Francaise des Chiragiens 2 Me Congress, Paris, 1896, p. 392.

7. Bevan, A. D.: Surgical Clinics, Chicago, 1917; 1, pp. 449-457.

8. Goldman, E. E.: Die Zweidentige Operation von pulsionsdivertikeln der Speiserohoe, Beitr. Z. Klin. Chir. 61: 741, 1909.

9. Murphy, J. B.: Surgical Clinics, Chicago, 1916; 5, p. 391.

10. Mayo, C. H.: Diagnosis and Surgical Treatment of Oesophageal Diverticula. Report of eight cases; Am. Surgery, 1910, 5-1-812.

11. Lahey, F. H.: The Surgical Management of Very Small and Early Pulsion Oesophageal Diverticula; Surg. Gynec. and Obst.; Feb., 1933, Vol. LVI, No. 2, 187-191.

12. Babcock, W. Wayne, and Jackson, Chevalier: The Single Stage Operation for Pulsion Diverticulum of the Oesophagus. Surg. Gynec. Obst., Nov., 1931, Vol. LIII, No. 5, 667-669.

13. Moersch, Herman J., and Judd, E. S.: Diagnosis and Treatment of Pharyngo-Oesophageal Diverticulum; Surg. Gynec. & Obst., April, 1934, Vol. LVIII, No. 4, p. 781-785.

14. Arrasmith, W. J.: Oesophageal Diverticula. Nebraska State Med. Jour., 1924, IX (8) 307-311.

IDEALISM IN THE MEDICAL PROFESSION*

EDMUND G. ZIMMERER, M. D., F. A. C. P.,
Chairman, Medical Section,
Lincoln, Nebraska.

The time honored custom which annually imposes a so-called medical address on this body, likewise decrees that its subject shall be non-scientific, but related to the practice of medicine. The subjects of ethics and medical economies, despite the timeliness of the latter, are more or less hackneyed. Hence, at the risk of being somewhat trite, I have chosen to speak on Idealism in the Medical Profession.

Idealism, as an abstract conception of an ultimate object of attainment, conceived as supremely excellent, strikes one at first thought as being entirely foreign to, if not altogether opposed to science. Science in medicine demands of us what we know. Idealism on the other hand, asks us what we believe. Modern medicine boasts of its exact knowledge and its unwillingness to accept mere theory, yet no less an authority than Osler says, "No other profession can boast of the same unbroken continuity of methods and ideals."

Possibly it is our notion of science as being concrete, materialistic and practical that has brought about the present day trend from the more spiritual conception of our vocation. More likely, it is the insiduous yet ever increasing invasion of commercialism that has deprived the laboratory of its poetry and medical practice of its art. Imagination is not always impractical. Without it there would be no hope to stimulate research, discovery and progress nor any discernment of probable obstacles or future opposition.

To most of us the ultimate goal of our professional endeavor as with everything else is success. But what is success in medical practice and by what standards is it to be judged? Who is the successful doctor?

Surely he is not the man with the largest practice or the greatest number of patients. If that is the test one of the most promising candidates for first place will be the man with the new model electrical diagnostic machine, the use of which by the way is scarcely more reprehensible than the abuse of metabolimeters or physical therapy apparatus, except that it is not done by the right man.

One would naturally say that the doctor who saves the most of his patients is the most successful. Anyone with even a slight acquaintance with hospital practice knows that a low mortality is not in itself the mark of a successful doctor. Such a criterion must take into account such factors as unnecessary surgery. A mediocre surgeon with little or no diagnostic ability can perform a long series of appendectomies with hardly a single death if he uses any selection in his cases. So a low mortality does not constitute a good doctor, or a successful one in the eyes of his colleagues.

Nor is one's standing in his profession a thoroughly reliable index of his success in medicine. We have all seen medical politicians occupying high places in the most exclusive professional societies, whose popularity is based more upon their ability to make a good impromptu speech or tell an apt story than upon their scientific acumen.

None of us would care to admit that the accumulation of a fortune is a sound test of success. If we would, it could be pointed out that the most blatant quacks are among the wealthiest medical men.

How then are we to gauge success in medicine? In my opinion there is but one standard by which real success can be measured. It is idealistic and is to be found only in the heart and mind of the individual himself. Its name is contentment. If he feels that in spite of occasional failure he is yet progressively doing more for his patients, if he is happy in his work, if regardless of fee or publicity he loves to operate, if he is happiest driving weary miles through long hours of darkness to the bedside of a parturient woman, if the atmosphere of the deadhouse and the revelations of the autopsy table stimulate him, if his greatest enjoyment is to be found among the retorts and test tubes and graduates of the laboratory, then he is successful in his vocation, regardless of what his fellow practitioners, the world in general or his banker in particular think of him.

---

*Medical address, delivered before the annual meeting, Nebraska State Medical Association, Lincoln, Nebraska, May 24, 1934.

How foolish then for us to bend all our efforts toward the accumulation of wealth, personal aggrandizement or even the establishment of a large practice. Such emoluments at best are difficult of achievement, empty and evanescent when attained and costly in their drain upon physical resources, personal pride and peace of conscience.

But it will be argued, such a philosophy is purely sentimental and has no application to the practical exigencies of this age. On the contrary, it is my theory that our failure to live up to the ancient idealism of our noble profession is directly concerned in our present economic plight and that proof of this statement requires no appeal to the emotions.

Professional idealism, like religion, is not a mere creed or confession of faith, but "must rest upon a true sincerity of purpose" (Anders). Impulse is not purpose, purpose requires sustained effort for the attainment of its ends.

The very name "Doctor" is a dignity bestowed upon the members of our profession as denoting our ability and willingness to teach in matters of health and implies a sincere belief in and devotion to the doctrine we profess. Now there is a tendency to discard that honorable title, just as we have discarded the medieval cap and gold headed staff of the doctor and the later frock coat and silk hat of our immediate forbears, much to the detriment I fear of our position in society.

Our fathers accepted not only all the dignity of a learned profession but all its obligations as well. Indeed, duty to many of them implied that the more repugnant a task the more meritorious its accomplishment. Today we swing to the opposite extreme. The height of our ambition now, is to build up an office or hospital practice that will bring us a comfortable income with a minimum of effort and a maximum of leisure for golf and bridge.

To the old time doctor, medicine was indeed a divine vocation. He gave his life to his profession. He not only read medicine, talked medicine, wrote medicine and thought medicine, but he practically ate and drank medicine and if he got any sleep at all he dreamed medicine. He found in his work all that he desired of pleasure and relaxation. To him, ethics was not a set of rules formulated by a medical hierarchy but was a code of honorable conduct with his fellows, both patients and doctors. When he opposed Homeopathy, Eclecticism or the other various pathies and isms that raised their heads in his day, he fought for a principle and he fought to the bitter end.

Today our ethics are more or less regarded as rules of etiquette for the guidance of novices in our ranks, a breech of which by one whose age or standing in the profession is unquestioned, is not seriously regarded. Theories, quite as radical and far more dangerous than any advanced by Hahnemann are fearlessly exploited with little fear of criticism provided, of course, they are published in the proper journals or sponsored by members of the right organization.

The old time doctor was to his people like a prophet, one set apart and enjoying an affinity with the divine. Even his human weaknesses and shortcomings were readily forgiven in the remembrance of his benevolence, his self-sacrifice and his naive wisdom. We moderns, indistinguishable by our dress or bearing from high school boys, laugh at the old fogey with his ill-fitting yet dignified garb, his saddle bags, his quaint notions of healing and utter lack of laboratory training. But he had a place in his community and in the hearts of his people that we can only envy. What he lacked in scientific training he made up by a generous heart and a broad understanding of human nature.

An intelligent layman recently cited his experience during the illness of his daughter. The family physician and several consultants had been called and the progress of the case had been in every way satisfactory. "But," said he, in telling of it, "only one man, and that a consultant, ever called up to inquire how she was doing." He and his family would have liked to believe that their family doctor at least, had such a personal interest in the case, that he wouldn't have been able to rest comfortably until he had had at least a telephonic report as to its progress. Here were five or six doctors, all ethical and scientific so engrossed in their test tubes that they didn't see a human being and sympathetic worried family beyond them.

But there are more practical angles to this subject. The medical profession through indifference, laziness or whatever you care to call it, have surrendered some of their most important functions to nurses, technicians and various laymen and groups of laymen, at a distinct loss of prestige. What is the difference between an osteopath with some medical training using physiotherapy apparatus and allowing the office girl to do the same thing with only nominal supervision by her employer. Nurses, today are being taught, to what purpose God only knows, the use of the stethoscope and sphygmo-manometer. And these lay groups, sensible of their opportunity, are organizing and adopting titles that sound like academic degrees. Eventually, it will be as uncommon for a doctor to take a blood pressure as it already is for him to do refractions and the practice of medicine will be in the hands of technicions, dieticians, radiologists and the like, all trained by physicians to put him out of business.

Every week or so some group of philanthropic layment get an urge to etablish a dispensary or a clinic to add to the long list of federal, state, county, city and school district agencies which are already established to dispense free medical service to the indigent and for the upkeep of which the doctor like everyone else is taxed. These new superfluous agencies rent rooms or buildings for a cash rental, pay for publicity and printing, hire secretaries, accountants, janitors and attendants and the poor foolish doctor whose knowledge makes the whole program possible and whose practice it is undermining, far from resenting it, volunteers his services, gratis. For charity? No for publicity, prestige and to outdo his competitor! And who gets the credit in the long run? Usually some active lay member of the sponsoring organization or the group itself—anybody but the doctor or the medical profession.

Now for the sake of the empty prestige that seems to be our sole reward for assisting in the maintenance of these countless governmental, civic, public and semi-public agencies, some of our county organizations eagerly accept federal aid at half our usual fee schedule. Laborers, contractors, engineers, manufacturers all are entitled to a wage for their service and a profit on their merchandise. The doctor is either so well fixed that he doesn't need aid or they think poor as he is, he might as well starve for he's of no use to the community. In either case we ought to reject such an unfair plan. If we can't be paid what our services are worth, then let us work for nothing and at least save our self respect.

Perhaps my arguments seem contradictory when I urge an adherence to the traditions of medical practice and yet oppose such humanitarian plans. On the contrary, I am attempting to reconcile practical with theoretical idealism. The church and the legal professions, like ourselves, boast of their aloofness from sordid pecuniary motives. But the church insists that the laborer is worthy of his hire and does not spurn even the widows mite. Every man is equal before the bar of justice and lawyers are sworn officers of the court, but we all know that the man who can pay well has a better chance of obtaining justice than one without means. But these professions jealously guard their prerogatives. The lawyer's stenographer may brief his case, but the lawyer presents his arguments to the court. The ministers secretary may write his sermons, but he delivers them from the pulpit.

Let doctors then jealously guard their dignity and be true to their traditional ideals. Let us dispense charity with a free hand to all who are in need but let us do it in our own name or in the name of the medical profession and not to bring glory to some lay organization. Let us zealously guard the interests of our profession against the incroachment of governmental or lay agencies which will ultimately deprive us of all our rights and dignity. Let us forget personal profit or glory for the moment losing our individuality not for the state or any alien power but for the common good of the profession of medicine. We may not profit financially, we may not gain fame or win patients but we will achieve the reward of contentment which is success, elevate the position of the doctor to its wonted place in human society and so make practical the ideals of the medical profession.

ACCIDENTAL DEATH

He had a prophylactic bent
And led a sterile life,
Had hygienic children and
A sanitary wife.
Lived in a fumigated house
And wore aseptic suits
Ate germicidal food and smoked
Denicotined cheroots.

His milk was always pasteurized
He drank denatured water,
He ne'er forgot to swat the flies
Mosquitoes he would slaughter.
He screened his doors and windows
His office disinfected:
Against microbes of every kind
He felt himself protected.

He exercised, he slept by rule
And timed his every breath,
His health was excellent and he
Defied disease and death.
His plan was admirable, no doubt,
Alas, the measly luck!
He went out and got run over
By a ten-ton power truck.

—Victor Levine.

ABDOMINAL HODGKIN'S DISEASE: CASE REPORT

J. MARSHALL NEELY, M. D.,
Pathologist—Lincoln General Hospital.

Hodgkin's disease, occurring primarily in the gastrointestinal tract is very infrequently encountered. The immunity of the gastrointestinal tract to Hodgkin's infiltration was formerly used as a criterion to differentiate this disease from lymphosarcoma. Hayden and Apelbach, in 1927, found 26 cases in the literature and presented three more cases. Anderson, in 1922, found 252 cases of lymphosarcoma in the gastrointestinal tract reported in the literature. In reviewing some of the cases of lymphosarcoma of the gastrointestinal tract reported, one is at once impressed by the striking similarity of the gross and microscopic findings in gastrointestinal Hodgkin's disease and lymphosarcoma. It is highly probable that at least some of the cases reported as lymphosarcoma should, in reality be classified as Hodgkin's disease.

No attempt will be made here to present the many theories regarding the etiology of Hodgkin's disease. An excellent review of the subject in general has recently been presented by Wallhauser(17). The age of greatest incidence in gastrointestinal Hodgkin's disease corresponds about to that of the disease in general and occurs during the 4th and 5th decades of life. It occurs more commonly in males than females.

Very few diagnoses of the disease have been made clinically. This is due to several factors. Probably the greatest obstacle to clinical diagnosis is the lack of any positive physical findings, which, together with the bizarre indefinite and multiple symptoms and rarity of the disease makes clinical diagnosis almost impossible.

The onset, as in the general form of the disease, is insidious. Later, abdominal pain, diarrhea, cachexia and fever may appear. The abdominal pain is usually intermittent in character and quite generalized. The spleen and superficial lymph nodes in the gastrointestinal type are usually not palpable. Dalrymple believes that the Pel-Ebstein type of temperature often occurs in the gastrointestinal type but that the temperature may be sustained, often leading one to suspect sub-acute bacterial endocarditis. There is nothing characteristic in the blood picture although the leucocyte count is either normal or shows a leukopenia in a high percentage of cases. Weber believes that eosinophilia often points to gastrointestinal involvement. There is usually a relative increase in polymorphonuclears.

Hodgkin's infiltration may involve any portion of the gastrointestinal tract though the esophagus is least often, if ever involved. In the 26 cases reported by Haden and Appelbach(27), the following distribution was noted: Stomach 3, small bowel 10, stomach, small bowel and large bowel 10, and large bowel alone, 3 cases. Hodgkin's disease involving the gastrointestinal tract differs from the hyperplastic type of tuberculosis in that it tends to occur in the upper portion of the small intestine while tuberculosis affects primarily the lower ileum and cecum.

Not only is it very difficult to make a clinical diagnosis of this condition but a diagnosis of Hodgkin's disease is also very difficult from study of the gross pathology of the intestinal tract. The lesions occurring here may be polypoid in character, forming large, soft masses projecting into the lumen, or flat small areas of mucosal thickening may be present. A diffuse thickening of the small intestine may also occur causing the bowel to become a somewhat rigid tube. The differential diagnosis of lymphosarcoma and Hodgkin's disease from the appearance of the gross pathology is particularly difficult and, in most cases is not possible. However, there are several points of difference noted. Lymphosarcoma is usually more localized and shows a greater tendency to infiltration than does Hodgkin's disease. Ulceration and perforation, with resulting peritonitis more commonly occurs in Hodgkin's disease. Usually the Hodgkin's lesions are multiple though rare instances of single lesions have been reported. In contradistinction to the general disease, the spleen and liver are usually not enlarged, although the mesenteric lymph nodes are usually involved. When ulcers are present in the gastrointestinal mucosa they are characterized by elevated margins which slope towards a base which is covered by a stringy greyish appearing material. Caseation necrosis occurs so frequently in the abdominal type of Hodgkin's disease as to be almost a constant feature. (Fiegenbaum).

The histopathology does not differ materially from that seen in the general disease. The lymphoid hyperplasia apparently begins in the mucosa and submucosa, and, in some instances, simultaneously in the mesenteric lymph nodes. Mucosal ulceration occurs early and the infiltration passes through the muscularis mucosa to invade the muscle layers nearly to the serosa. Lymphocytic cells varying from the large lymphoblastic type seen in the germinal centers of the lymphatic tissue to the adult small lymphocyte are found enmeshed in a reticular framework showing a definite increase of both reticulum and reticuloendothelial cells. Sternberg-Reed giant cells are usually encountered but are less commonly seen in the large numbers such as occurs in the general disease. In the case presented here however, both the uninuclear and the multinuclear types of giant cells are found in great numbers. This is particularly true of the sections of the gastro-intestinal lesions. In the lymph nodes, on the other hand, only an occasional giant cell is found.

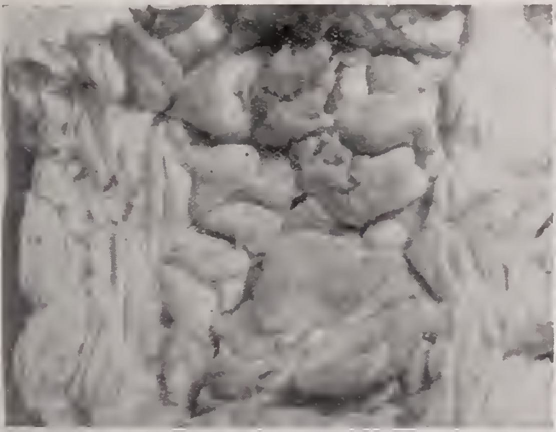


Fig. 1 (Upper left). Photograph of tumor removed at operation.

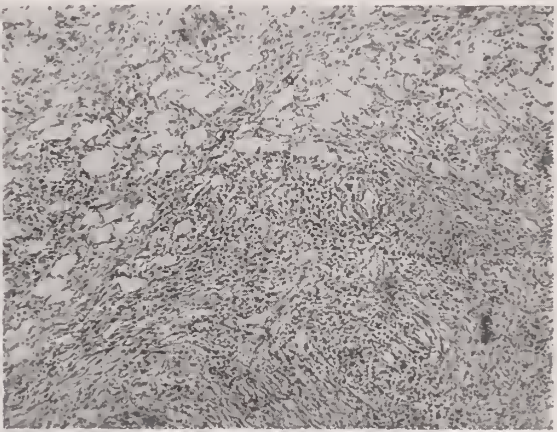


Fig. 2 (Upper right). Low power photomicrograph of a section of mesenteric lymph node showing fibroblastic proliferation.

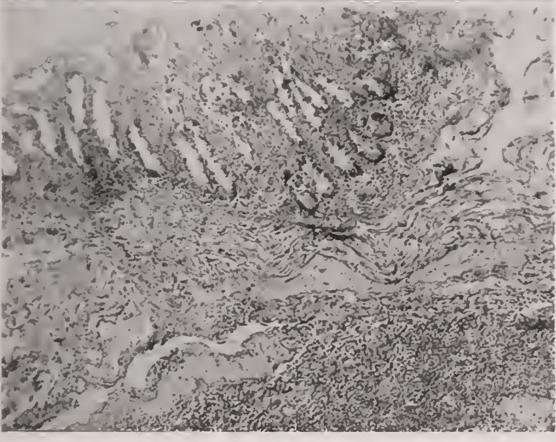


Fig. 3 (Lower left). Lower power photomicrograph of small intestine showing tumor infiltration.

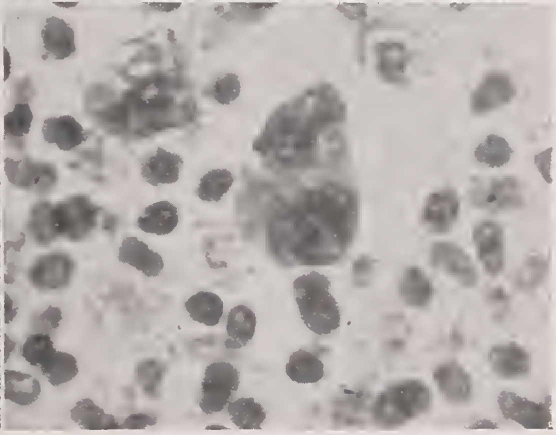


Fig. 4 (Lower right). High power photomicrograph of intestinal lesion showing two Reed-Sternberg giant cells.

The necrotic lymphatic tissue, most frequently seen in the mesenteric lymph nodes, differs from tuberculous caseation in that the histologic structure, particularly the framework, in the necrotic areas is retained.

Leukemic infiltration of the gastrointestinal tract rarely, if ever occurs. (Symmers). Symmers also believes that cases of so-called pseudoleukemia of the gastrointestinal tract are in reality lymphosarcomas. Eosinophiles and plasma cells occur in varying numbers in Hodgkin's disease. Wallhauser describes the mitotic figure of Hodgkin's disease as an irregular bundle and that of lymphosarcoma as being club shaped.

CASE REPORT (HOSP. NO. 20863 AND 21055)

The case is that of a male glass worker, age 65, who was first admitted to the Lincoln General hospital complaining of severe intermittent pain in the lower left abdomen, gaseous eructations and loss of appetite. The family history reveals the fact that the patient's father died of a lower abdominal tumor, the exact nature of which could not be determined. The patient states that he had a severe pulmonary hemorrhage in 1896, and a severe gastrointestinal upset of some sort in 1905.

For a period of about 3 months before admission the patient experienced vague lower abdominal distress. About one month before admission he had a severe chill lasting over a period of about 45 minutes, at which time he complained of pain in the right kidney region. Three weeks later he was cystoscoped and the right ureter was dilated. This was followed by another chill and pain in the right lumbar region.

For a period of two weeks before admission the patient noticed intermittent, rhythmic, lower abdominal pain.

Physical examination revealed some evidence of infection about the gum margins. There was no evidence of adenopathy. There was some impaired resonance at the right apex and the abdomen showed slight tympanities, most marked in the region of the left lower quadrant.

Two days following admission a gastrointestinal series showed nothing of note save for a slight retention of the barium in the cecum. A K.U.B. showed no evidence of renal or ureteral calculi. The urologist, at the time of ureteral catheterization felt that there was an obstruction at the right uretero-pelvic junction and made a futile attempt to dilate it. The gastro-intestinal symptoms were thought to be due to reflex spasm from the kidney pathology and May 1, 1933, the right kidney was removed.

Examination of the kidney at this time disclosed a pyonephrosis with obstruction at the uretero-pelvic junction due to a kink of the ureter and what appeared to be chronic inflammatory tissue.

Following a rather stormy postoperative course the patient became sufficiently improved to return home May 18, 1933. On the second day following operation he had a recurrence of intermittent lower abdominal pain. Throughout his entire stay in the hospital there was a daily afternoon rise in temperature to about 100 degrees F. except immediately after operation at which time it rose to 103 degrees F.

The patient was re-admitted to the hospital May 27th, 1933, with acute severe pain in the left flank which began very suddenly the day of admission. The temperature was 100 degrees on admission and soon arose to 101 degrees F. A flat plate of the abdomen and barium enema were done the following day. The report follows: "Flat films of the abdomen shows gas in the hepatic and splenic flextures of the colon. There is also gas seen in the small intestine which indicates an intestinal obstruction. The barium enema shows spasticity of the sigmoid region with definite dilatation of the splenic flexure and some dilatation of the transverse colon. There is a marked spasm in the mid-portion of the transverse colon. Gas remains in the small bowel as seen in the flat film. There is no evidence of filling defect in the colon."

On May 29th, an exploratory laporotomy was done and generalized peritonitis was found. Several polypoid tumors of the small intestine were encountered, and one which was obstructing and through which there had been perforation was resected. The patient's condition became progressively worse following operation and death occurred May 30th.

Gross and microscopic study of the resected tumor showed it to be distinctly mesenchymal in character and a diagnosis of "lymphoblastoma" was made.

At the time of the first hospitalization, the leukocyte count was 10,850 and the following differential count was recorded: Staff 2, segmented cells 79, and lymphocytes 19%. The urine showed 13 pus cells per high power field and a P.S.P. showed 20% dye output the first hour and 25% the second hour. When he was admitted the second time urinalysis showed 6 to 8 leukocytes per high power field and the leukocyte count was 6,800. The erythrocyte count was 3,600,000. The day before death the leukocyte count was 15,000 and the following differential was recorded: Sepmented 24, staff 18, young 17, myelocytes 3, eosinophiles 3, basophiles 0, lymphocytes 32, and monocytes 3.

ABSTRACT OF NECROPSY

External examination revealed nothing remarkable save for the operative wounds and rather marked abdominal distension.

On opening the abdomen the coils of intestines are found to be lusterless and the peritoneal cavity contains about a liter of sero-sanguinous fluid. The omentum is adherent by fibrinous adhesions to the anterior wall in the site of the recent surgical incision. The coils of the intestine are distended and adherent to each other by a fibrinous plastic exudate. There are friable fibrinous adhesions between these coils of intestines and the anterior abdominal wall. The cecum lies just beneath the edge of the liver and the appendix shows no evidence of inflammatory process. On following the ileum proximally from the cecum it is found to extend deep into the pelvis at which place it is adherent to the urinary bladder by both fibrous and fibrinous adhesions. Just proximal to this point of attachment there is a perforation of the bowel about which there is a thick layer of fibrinous exudate. Examination of the site of resection shows no evidence of leak. The entire intestinal tract is markedly distended and the mesenteric glands throughout are markedly enlarged and are firm to palpation.

Examination of the thoracic viscera reveals nothing of importance save for an old fibrous tuberculosis in both apecies. The liver shows some cloudy swelling and fatty metamorphosis and the spleen is not appreciably enlarged. The pulp is slightly softer than normal. Examination of the left kidney shows nothing of significance. There is a benign hyperplasia of the prostate. The paravertebral lymph nodes are enlarged, discreet, and hard to palpation. On cut section they are found to be homogeneous in consistency and pink grey in color. The pancreas and adrenals are not remarkable.

Examination of the gastrointestinal tract reveals a relatively normal stomach. At a point about 50 cm. from the pyloris there is an oval shaped irregular reddish grey tumor attached to the mucosa by a broadly sessile base. The tumor is firm but not hard in consistency. At a point about 30 cm. distal to this tumor there is another tumor of similar nature. At the point where the ilium was attached to the fundus of the urinary bladder there is an annual strip of tumor tissue very similar to that removed at operation. Here, there is another perforation of the bowel wall. The colon shows nothing abnormal

Anatomical lesions: Multiple tumors of small intestine (lymphoblastoma), benign prostatic hypertrophy, general fibrinous peritonitis, multiple perforation of the small intestine, post-operative intestinal resection and nephrectomy, cloudy swelling of the liver, toxic myocardium, septic splenitis, bilateral old healed tuberculosis, pleural adhesions, coronary sclerosis (slight). Cause of death: Generalized peritonitis and ruptured intestine.

MICROSCOPIC:

Sections of the liver shows a marked fatty metamorphosis, and cloudy swelling. Sections of the myocardium show some swelling of the muscle cells but nothing else of significance. There is some cloudy swelling of the renal tubules and sections of the lung show an old fibrous tuberculosis. The adrenals and pancreas show nothing of note. Sections of the prostate show rather advanced hyperplasia of the epithelial elements with some increase of fibrous connective tissue and smooth muscle fibers. The gallbladder shows some thickening and lymphocytic infiltration. Sections of the spleen show the malphigian corpuscles to be small and the pulp is not remarkable save for the fact that it is slightly congested. None of the changes commonly seen in Hodgkin's disease are encountered here.

Sections of the tumors occurring in the small intestine show them to be made up of varying sized and shaped mononuclear cells. The tissue is literally loaded with both mononuclear and multinucleated giant cells. These many types of cells are enmeshed in a very markedly hyperplastic reticulo-endothelial network. Many of the cells are characterized by an abundant pale blue staining cytoplasm and a coarsely arranged nuclear network. Many smaller cells are also seen having all of the characteristics of adult lymphocytes. Plasma cells, with their characteristic chromatin arrangement are frequently seen. No young red cells or myelocytes are encountered but fibroblasts are frequently found.

The tumor has apparently started in the mucosa and sub-mucosa and has deeply infiltrated the muscularis almost to the serosa. There is a marked degree of ulceration of the overlying mucosa and an acute inflammatory is seen on the serosa.

Sections of the mesenteric lymph nodes show dense formation of collagen fibers throughout which there are scattered cells, varying in size and shape and having the same morphologic characteristics as those seen in the intestinal lesions. The central part of some of these nodes shows marked necrosis, but, throughout these areas of necrosis there persists the reticuloendothelial framework seen in the other areas. Only a very occasional giant cell is encountered in these sections.

After the autopsy was done more sections were made of the tissue from the region of the right uretero-pelvic junction and typical Hodgkin's tissue change is found, apparently originating in lymph nodes and partially invading the wall of the ureter.

COMMENT:

This case is unusual in that Hodgkin's disease, limited entirely to the abdominal cavity, has invaded the right uretero-pelvic region causing obstruction and further diverting attention from the gastrointestinal tract to the genito-urinary tract. On the other hand, the case is similar to many others reported in the literature as regards lack of splenic enlargement, multiple involvement of the small intestine, multiple perforation, and simultaneous involvement of the mesenteric lymph nodes. This case also falls in line with other similar cases reported in that a clinical diagnosis was not made.

Judging from the type of histology found in the mesenteric lymph nodes, one would assume that this group of glands probably showed pathologic change earlier than the gastrointestinal tract. The change in the lymph nodes is older as evidenced by marked proliferation and almost complete replacement of the lymph tissue with adult fibrous connective tissue.

Histological study is usually necessary in order to make a differential diagnosis between Hodgkin's disease and lymphosarcoma involving the gastrointestinal tract. Abdominal Hodgkin's disease differs from the hyperplastic form of tuberculosis in that the latter tends to involve the lower ileum and cecum while the former usually is found in the upper intestinal tract and very rarely involves the colon.

In reviewing the literature with particular reference to lymphosarcoma and Hodgkin's disease as they involve the gastrointestinal tract leaves one with the impression that the difference, in both the gross and microscopic description is slight. It is very likely that, if a sharp line can be drawn between these two conditions, many which have been reported as lymphosarcoma are, in reality, Hodgkin's disease.

SUMMARY AND CONCLUSIONS

1. A somewhat unusual case of abdominal Hodgkin's disease has been presented.

2. There is nothing constant in either subjective or objective findings which makes the clinical diagnosis of abdominal Hodgkin's disease possible.

3. The fact that Hodgkin's disease, like lymphosarcoma, may involve the gastrointestinal tract further supports the idea held by many, that these two pathological entities are probably slightly different manifestations of the same disease.

(Bibliography in Reprints)

THYROID DISEASE COMPLICATED BY PREGNANCY

A REPORT OF TWO CASES

HARRY EVANS HARVEY, M. D., GEORGE W. COVEY, M. D., and
CLAYTON ANDREWS, M. D.,
Lincoln, Nebraska.

Thyroid disease when associated with pregnancy and hyperemesis gravidarum presents many grave and perplexing problems to the obstetrician, internist and surgeon. It is to illustrate the problems of diagnosis and management that these two somewhat unusual cases are presented. The first case, one of hyperthyroidism complicated by pregnancy and hyperemesis is as follows:

Case No. 1: Mrs. R. C. (Hospital No. 20848) age 38, white, farmer's wife. The patient has had five normal full term pregnancies and three miscarriages at 14, 6 and 20 weeks. Following the last miscarriage one and one-half years ago, recovery of strength of the leg muscles was slow. The family and menstrual history was not significant.

First seen on April 21, with complaint of extreme weakness of eight weeks duration and persistent vomiting of six weeks duration, and was admitted to the Lincoln General Hospital at once. Previous to the time of the present illness the patient was well, except for severe pyelitis three years ago, of two weeks duration. The patient had been conscious of a rapid and irregular heart action at times, during the past two or three years. The last menstrual period was January 28. About March 1, or one month after the last period, the patient observed an increasing weakness. The weight at that time was 176 lbs. (80 Kg.), which was 5 to 10 lbs. (2 to 4 Kg.) under her usual weight. Two weeks later or about six weeks after the last menstrual period marked the onset of severe nausea and vomiting which was unrelieved by simple measures. Nine days after the onset of vomiting she entered a nearby hospital under the care of her local physician. She was placed on a recognized treatment consisting of intravenous glucose, sedatives and frequent feedings with apparent temporarily good results. Nine days later she returned to her home but in spite of the relief from vomiting the weakness and loss in weight was progressive. During the next two weeks the vomiting returned but to a less severe degree.

When first seen by one of us (HEH) on April 21, she presented a picture of extreme prostration and restlessness. The body movements were almost constant, poorly coordinated and for the most part purposeless. The eyes were staring, the skin was dry and loose. The weight was 131 lbs. (60 Kg.); pulse, 140; temp., 99.2; and the respiration 20. The blood pressure on first reading was 148/84. The size of the uterus corresponded to the menstrual history, 3 to 3½ months pregnancy. The pelvic measurements were within normal limits. The perineal floor was deeply lacerated.

The urine contained 2 plus diacetic acid and acetone, and a trace of sugar.

The immediate treatment was as follows: Absolute rest in bed; ice bag to the epigastrium. Food was withheld. Liquids were given in teaspoonful amounts. 25 grams of glucose in 500 cc. normal salt solution was ordered every eight hours. Sodium bromide, 2 grams in 90 cc. solution was given twice daily by bowel and sodium luminal, 0.13 gram twice daily intramuscularly.

The following morning the blood sugar was 92 mg. /100 cc. blood. The basal metabolic rate was a plus 82%. The weight was 126 lbs. (57.3 Kg.). Because of poor veins, 5% glucose in salt solution was given by hypodermoclysis. She was placed on the feeding schedule as outlined by Titus(1), and Lugol's solution was added to the medication as recommended by Falls(2) in the treatment of toxic vomiting of pregnancy. Under sedation and divided feedings the vomiting subsided and parenteral fluids were discontinued after the first 36 hours.

In a review of the history at this point two facts stand out: First, that the onset of weakness together with some loss of weight preceded the onset of vomiting by a period of two weeks, and, second, that in spite of the early moderately satisfactory treatment of vomiting the weight loss and weakness became increasingly severe. The explanation appeared in the physical findings of the patient and in the high basal metabolic rate. The tentative diagnosis was: Pregnancy in the third month complicated by hyperemesis gravidarum and severe hyperthyroidism, though the history is mildly suggestive that hyperactivity of the thyroid of low grade, preceded the pregnancy and one could perhaps consider it the primary disease complicated by pregnancy and hyperemesis gravidarum.

On the second day after admission she was seen by the medical consultant (GWC) who noted these additional findings: Positive von Graefe and Stellwag's sign with difficulty in convergence; tremor of the lips, tongue, hands and even the feet on any muscle action; slight smooth and symmetrical enlargement of the thyroid gland. The heart was moderately enlarged to the left, the apex thrust being at the fifth intercostal space halfway between the mid-clavicular line and the anterior axillary line. A systolic murmur was heard over the mitral area and another over the base of the heart was transmitted upward to the neck. The medical consultant concurred in the diagnosis and program of treatment already instituted.

Twelve days after admission the surgical consultant (CA) was called, and agreed with the diagnosis as noted above. At this time it was definitely decided to resect the thyroid whenever the condition of the patient warranted operative interference.

The following basal metabolic rates are an accurate index of her progress: April 22, plus 82%; April 24, plus 59%; May 2, plus 30%; and May 16, plus 12%. At this time she seemed ready for operation, consequently on May 20, a bilateral resection of the thyroid was done. Both lobes were enlarged from three to four times normal size together with a very large isthmus. Grossly the gland presented the typical red "beefy" appearance. About four-fifths of each lobe was resected together with the entire isthmus.

Pathological diagnosis: Exophthalmic goiter; involutionary stage.

The patient's recovery was rapid and uncomplicated. On the ninth postoperative day she was up and about with a pulse of 80 and blood pressure 122/56 and the following day she was dismissed.

Following her recovery from thyroidectomy the pregnancy progressed normally. The weight gradually increased to a little over 176 lbs. (80 Kg.). The blood pressure ranged in the neighborhood of 126/80 and the pulse about 90.

On November 1, 1933, a normal male child was born spontaneously after a 6½ hour labor. Immediately following the completion of labor a posterior colporraphy was done for relief from an old second degree laceration. The puerperium was uncomplicated.

On November 11, 1933, the day preceding her dismissal from the hospital her basal metabolic rate was a minus 3%; weight 152 lbs. (70 Kg.); pulse 80. The uterus was involuting normally. The perineum was well healed.

On February 1, 1934, weight 178 lbs. (81 Kg.); pulse 88. Hemoglobin 71% or 15.0 grams oxyhemoglobin per 100 cc. blood. The general physical examination indicated apparent recovery from both the hyperthyroidism and the conditions incident to pregnancy.

In summary: The patient had hyperthyroidism (exophthalmic goiter) complicated by pregnancy and hyperemesis gravidarum. The hyperemesis was successfully controlled, medically, and she responded normally to the usual pre-operative preparation for Graves' disease. Her operative and postoperative response was in no way different than in the non-pregnant woman, and finally pregnancy progressed to a normal termination at term.

Discussion: To our minds this case presented one of the most serious problems with which physicians have to deal. At the time of her admission she was maniacal due to toxic vomiting of pregnancy and toxicity of a hyperactive thyroid. Obviously the condition was extremely serious both in regard to the life of the mother and the life of the child. The first condition to be overcome of course, was hyperemesis and following this, treatment of the thyrotoxicosis. The response to treatment for both of these conditions fortunately was very satisfactory and made it possible later to resect the thyroid and still later deliver a healthy baby.

The incidence of pregnancy in hyperthyroidism(3) is considerably lower than in normal women and is considered by most authorities as being dangerous and a thing that should be avoided. However, there is no contraindication to pregnancy in a cured case of thyrotoxicosis. As would be expected. spontaneous abortion and premature delivery is frequent in Graves' disease. It seems to be the opinion of most authorities that pregnancy may be considered the etiological factor if the thyrotoxicosis occurs during gestation or soon after term. Also it is not infrequent to have adenoma aggravated and become toxic during pregnancy or even a mild recurrence of thyrotoxicosis take place in an entirely cured Graves' disease.

It is to be remembered that there is a customary rise(4) in the basal rate in pregnant women averaging 15% and, unless the rate rises above 30%, the case should not be considered one of hyperthyroidism without other definite findings to supplement the basal rate. Numerous studies have shown quite clearly that thyrotoxicosis in the mother does not effect the foetus.

Experience in recent years, since the advent of Lugol's solution and better knowledge of the care of these cases, has definitely established the position that thyrotoxicosis(5) is not in itself an indication for the termination of pregnancy. These cases if possible should have a thyroidectomy in the first four or five months of pregnancy, at which time the procedure is attended with much less risk and with far less danger of miscarriage than later. If the pregnancy is from six to nine months. conservative treatment should be used for the thyrotoxicosis and then thyroidectomy advised shortly after delivery if necessary. It is wise to advise a thyroidectomised patient to avoid pregnancy for at least two years following the operation, although if pregnancy does occur it should not be interrupted.

Whenever hyperemesis gravidarum arises it is necessary to rule out hyperthyroidism as the causative factor and obstetricians and surgeons alike, should be watchful for the appearance of this condition during gestation.

Abraham J. Fleischer(6) states that a case of pregnancy with hyperthyroidism which is so severe as to require surgical measures should also be sterilized. To our minds this statement is entirely unjustified and not borne out by our experience or by the experience of others who have written upon this subject in recent years. Thyrotoxicosis lends itself admirably to surgical measures and we can, therefore, see no logical reason why the woman should be sterilized.

Case No. 2: Mrs. R. D. (Hospital No. 19595) age 26, white, referred by Dr. F. X. Rudloff. Admitted to the Lincoln General Hospital October 3, 1932, because of continuous vomiting, progressive loss in weight and weakness. Onset: The last menstrual period occurred January 30, 1932. About the fifth or sixth week vomiting began. She was placed in bed by her family physician and given sedatives, intravenous glucose and frequent feedings with complete relief from vomiting for a period of two weeks. She remained in bed for eight weeks during which time moderate vomiting returned, headache was constant, the weight fell from 140 lbs. (63.6 Kg.), her normal weight, to 125 lbs. (57 Kg.), and the edema which had appeared in the early weeks of pregnancy disappeared. The family physician found the urine normal; the blood pressure 125/70. During the period in bed a severe herpetiform rash appeared on the dorsum of the arms and legs progressing for a period of four to five days, stationary five days and then gradually subsiding leaving pigmented skin in the affected areas. Throughout this time she was on a regime of frequent feedings, calcium lactate 0.65 gram, b.i.d.; and Haliver oil.

From the fifteenth to the twenty-third weeks she was up and about some each day and vomited only occasionally. In spite of gradual recurrence of edema the weight fell to 110 lbs. (41 Kg.) remaining so until admitted to the hospital. The pulse which had always been between 60 and 70 fell to about 50. From the twenty-third week until seen on Oct. 3, the general condition remained about the same except that the patient was unable to go about because of weakness.

Past History: At the age of twelve an operation for appendectomy and the removal of a tumor of the ovary was performed. Three years earlier she had had pneumonia. Three months previous to the last menstrual period the basal metabolic rate was found to be minus 26%, and from that time on and throughout the pregnancy 0.13 gram or more of thyroid was taken daily.

Menstrual and Marital: The menses began at 14, were of 28 days cycle, lasting 4 to 5 days. Married four years. Therapeutic abortion in 1929 at 8 weeks gestation because of severe vomiting. Spontaneous abortion in 1931 at 5 to 6 weeks, there having been no vomiting. She required six to seven weeks for recovery. Just previous to the termination of pregnancy a rash appeared which was similar to that appearing in the early part of the present pregnancy.

The family history was not significant.

When first seen by us she presented the following notable findings: The nutrition was poor. The skin was loose without subcutaneous fat. The skin and hair were dry; the eyes sunken; the mucous membranes pale. The mentality was clear but the speech and thought slow. The patient stated that concentration was difficult. Moderate pitting edema of the face, feet, legs and sacral region was present.

The pulse was 44; respiration 15; temp. 97.8; blood pressure 100/76; weight 120 lbs. (64.5 Kg.).

Regional examination revealed nothing unusual. The pelvic measurements were within normal limits and the height of the uterus and the size of the foetus corresponded to the menstrual history.

The reflexes: The pupils reacted normally. No abnormal reflexes could be obtained. The biceps and abdominal reactions were active. The knee jerks were very sluggish and at times absent. The achilles, plantar, wrist and triceps were not obtained on repeated trials.

The specific gravity of the urine was 1.030. The urine examination was otherwise normal. The hemoglobin was 100% (Dare); the R. b. c.-4,110,000; W. b. c. 5,600; basal metabolic rate was minus 24%; the blood sugar was 106 mgs. and the blood calcium 6 mgs./100 cc. blood.

On the basis of previous history; i. e., therapeutic abortion for toxemia of pregnancy, spontaneous abortion and a known basal metabolic rate of minus 26%, together with her present findings of dry skin and hair, marked mental and physical fatigue, toxemia of pregnancy, low temperature and blood pressure and slow pulse, and finally, on admission, a basal metabolic rate of minus 24%, a diagnosis was made of long standing hypothyroidism without myxedema, complicated by pregnancy.

It is worthy of note that conception occurred after three months of thyroid therapy.

The low blood calcium was considered as due to long continued vomiting with consequent extreme under-nutrition in general.

The patient was placed on sedatives, small frequent feedings and vitamin D. Thyroid extract was continued 0.2 gram daily. Calcium gluconate in normal salt solution. Food was poorly tolerated and the retained caloric intake never exceeded 1500 calories.

During the next two weeks the daily urinary output exceeded the fluid intake, the apparent edema disappeared, the weight fell to 103 lbs. (47 Kg.) and the pulse rate rose to around 56; the blood pressure increased to 114/78 with slight improvement in strength. At this point the condition seemed stationary and labor was induced with some difficulty by medical means. At the end of a first stage, marked by periods of inertia, labor was terminated by a mid-forceps delivery of a normal male child.

The lying-in period was uncomplicated and on the twelfth post-partum day the weight was 85 lbs. (38.6 Kg.). One month after delivery slight dependent edema was still present. The kidneys diluted to 1.010 and concentrated to 1.020. Chemical and microscopic examination of the urine was negative. The weight was 83 lbs. (38 Kg.); the pulse was 64; the blood pressure was 90/68; and the hemoglobin 70% or 14.8 grams oxyhemoglobin per 100 cc. blood. The subsequent recovery was slow. Seven months after delivery the physical condition was good but emotional instability was still present.

Discussion: These two cases show a close parallel in their behavior, i. e., both had hyperemesis gravidarum and loss in weight during the early months of pregnancy, but stand in sharp contrast when the basal metabolic rate, and the response to treatment is considered. It might appear that in either case the vomiting is related to vegetative nervous system instability secondary to thyroid dysfunction. At any rate they substantiate the physiologic importance of normal thyroid activity during pregnancy.

In the first case the following points of interest may be further emphasized. Hyperemesis gravidarum is often associated with, and apparently caused by hyperthyroidism. If the thyrotoxicosis is too severe to respond promptly and completely to medical treatment surgical interference is indicated. Surgical treatment is best undertaken before the sixth month of pregnancy. After this time it is probably best to treat medically and operate after delivery. Preoperative preparation differs in no way from the usual procedure. After thyroid resection a normal termination of pregnancy may be expected.

The second case indicated that hypothyroidism does not preclude pregnancy, though the administration of thyroid extract(7)(8) may have been the factor permitting conception to take place. It also shows that hypofunction may also be associated with hyperemesis, perhaps as the causative factor; that this condition does not always lead to abortion especially if properly treated; that a cretinous child is not necessarily to be expected if the pregnancy progresses to term.

SUMMARY

1. Two cases are presented:
   a. One of thyrotoxicosis complicated by pregnancy and hyperemesis gravidarum.
   b. One of hypothyroidism complicated by pregnancy and hyperemesis gravidarum.

2. The first case, after proper preparation had a resection of the thyroid with prompt recovery and went to term, delivering a normal baby.

3. The second case was treated with thyroid extract and the usual procedures in hyperemesis; labor was medically induced at about 37 weeks and resulted in a normal baby.

BIBLIOGRAPHY

1. Titus, Paul, and Lightbody, H. D.: Report of Investigations to Determine the Therapeutic Dose of Dextrose (d-glucose) Administered intravenously. American Journal of Obstetrics and Gynecology: Vol. 18: 208-214 (July) 1929.

2. Falls. F. H.: Hyperthyroidism Complicating Pregnancy. Northwest Medicine: Vol. 28: 391-395 (Sept.) 1929.

3. Davis, C. H.: Thyroid Hypertrophy and Pregnancy. Journal of American Medical Assn.: Vol. 87: 1004-1009 (Sept. 25) 1926.

4. Soule, S. D.: A Study of Thyroid Activity in Normal Pregnancy. Amer. Journal of Obstetrics and Gynecology. Vol. 23: 165-171: 283-284 (Feb.) 1932.

5. Mussey, R. D., Plummer, W. A.: Treatment of Goiter Complicating Pregnancy. Journal of American Medical Assn.: Vol. 97: 602-605 (Aug. 29), 1931.

6. Fleischer, A. J.: Thyrotoxicosis Complicated by Pregnancy. American Journal of Obstetrics and Gynecology. Vol. 22: 273-276 (Aug.) 1931.

7. Brown, C. Frank: Hypothyroidism in Pregnancy. Texas State Journal of Medicine: Vol. 26: 406 (Oct.) 1930.

8. O'Keefe, Charles D.: Relation of Hypothyroidism to Obstetrics and Gynecology. Southern Medical Journal. Vol. 20: 375 (May) 1927.

PROGRESS OF SURGERY

(Review of the Literature of the First Half of 1934)

HERBERT H. DAVIS, M. D., F. A. C. S.,
Omaha, Nebraska.

ENDOCRINE SURGERY

Repeated articles in the last few years by Lahey⁽¹⁾ and his associates on the subject of thyrocardiacs have shown that patients in seemingly hopeless stages of decompensation could, by subtotal thyroidectomy, not only have their compensation restored but be rehabilitated to a degree that would permit normal activity in most of the cases.

Lahey and Hurxthal have recently presented additional evidence with their follow-up studies which indicated: that 71.5% of patients with auricular fibrillation were restored to and remained in normal rhythm following the removal of their hyperthyroidism; that the operative mortality in this serious group of cases was only 4.25%; and that compensation was restored and persisted in at least 95% of the patients.

In answering a patient's question as to "How long will it be after I am operated on before I am well as I am going to be?", the status of the thyroid gland should be considered. With a lessened function, Van den Bergh⁽²⁾ stated, a retarded convalescence could be expected. A very slow convalescence rate may be the trial test and, therefore, the hint that thyroid medication is needed to supply the energy charge that is lacking. The dosage of desiccated thyroid extract depends largely upon the degree of deficiency. He advised in most of these cases the use of three to five grains daily for two weeks and then to reduce the dosage gradually. It must be carefully supervised. He learned that in some cases two or three months' treatment seemed to arouse the thyroid to action so that further administration was not needed. In the majority of cases, however, it had to be given for a number of months, and in some instances, indefinitely.

Hinton, Morton and Weeks⁽³⁾ have done some very interesting work, both animal experimentation and clinical cases upon the relationship between thyroid disease and pancreatic function. They would not yet draw definite conclusions. It was seen that dogs, with their pancreatic ducts ligated and without medicine, developed colloid goiters with high iodine content of the gland. They progressively lost weight and usually died within six to twelve weeks. Some, however, lived a longer period.

The administration of potassium iodide, tyramine or di-iodotyrosine resulted in death of animals that had had their pancreatic ducts ligated, whereas animals without their ducts ligated tolerated these medicines without ill effects. Dogs that were given thyroxine intravenously, after ligation of their pancreatic ducts, maintained their weight, remained healthy and rarely died if thyroxine was administred regularly.

From clinical observations of typical cases of hypothyroidism it was found that they responded much more satisfactorily to the intravenous use of thyroxine and thyroid by mouth than did cases that were receiving thyroid without the intravenous use of thyroxine.

The investigators obtained marked symptomatic results on cases of peptic ulcers treated with thyroxine and thyroid therapy. They did not claim this a cure for ulcer. The good results might be explained on the basis of a chronic pancreatitis, associated with the ulcer.

DeCourcy, DeCourcy and Thuss⁽⁴⁾ have stated that an analogy exists between the overactivity of the suprarenals, due to hypersuprarenalism and the overactivity of the thyroid. They found that partial bilateral suprarenalectomy gave results in essential hypertension comparable to the results of thyroidectomy in hyperthyroidism. In some of the cases this operation relieved all of the symptoms of hypertension. There was a relation between hypersuprarenalism and hypertension; in states of essential hypertension it was always possible to demonstrate hyperplasia of the suprarenal medulla.

THORACIC SURGERY

Lindskob and Bradshaw(5) experimenting with the cat, dog, rabbit and human (fetus) have found that a threshold differential pressure existed for the reinflation of atelectasis. This varied from 12 to 16 centimeters of water. If this pressure was not reached or exceeded, reinflation did not occur. The effect of chronicity in the atelectasis (up to 26 days) was not to raise the threshold, or to raise it only to an insignificant degree (2 cm. average). The type of anaesthesia (ether or nembutal) had no demonstrable effect on the threshold pressure. Reinflation, as indicated by the effective pressures, proceeded as readily by the collateral as by the direct bronchial route. The use of a positive pressure control in prophylactic or therapeutic inhalations in combating atelectasis was proposed.

A very interesting case of superior vena caval obstruction successfully treated by mediastinal decompression has been reported by Ehrlich, Ballon and Graham(6). They also reviewed the literature upon the subject of superior vena caval obstruction and discussed the various forms of treatment which may be employed.

GASTRO-INTESTINAL SURGERY

Abel(7) reported a case of primary carcinoma of the liver successfully removed by partial hepatectomy. It was of large size, being twice the normal weight of the liver. It arose from the intrahepatic bile ducts and occupied almost all of the left lobe of the liver. There were no metastases. The tumor, with a good inch of apparently normal liver, was removed. There was not much hemorrhage. The patient made an uneventful recovery and has remained well the seven months since the operation. Unoperated cases, on the other hand, usually die within six months.

NEUROLOGICAL SURGERY

Based on favorable results in a series of twenty-one cases, Dr. DeCourcy(8) has strongly recommended resection of the presacral nerve for the relief of obstinate cases of dysmenorrhea which have proved resistant to ordinary measures. The technique is rather delicate and good judgment in the selection of suitable cases is a prime requisite.

Davis and Cleveland(9) found that in nerve transplants the scar formed at the line of suture between the distal end of a transplant and the end of the distal segment of the peripheral nerve might act as an impenetrable barrier to the downgrowing neuraxons. Resection of this distal scar, after the neuraxons have grown down to it, and resuture of the nerve there allowed continuation of the growth of neuraxons into the distal segment of the nerve. Neuraxons grew through a nerve transplant three centimeters in length to reach the distal line of suture in sixty to seventy days.

SURGERY OF EXTREMITIES

The surgical removal of a glanglion, in spite of very careful dissection, does not prevent frequent recurrence and, in addition, leaves a more or less extensive scar. Kaplan(10) has had very successful results in ten cases by aspiration and injection of sodium morrhuate. Most of the patients required only one injection; three required two injections. None showed any recurrence in two to six months. The technique was as follows: a needle gauge 16, 1 inch long, was inserted into the ganglion on one side, the other side being held by the index finger of the hand. The thick gelatinous fluid was withdrawn while pressure was made by the finger upon the ganglion. Then, without withdrawing the needle, this syringe was removed and another syringe, containing five per cent sodium morrhuate, was attached. Five minims to one cubic centimeter of sodium morrhuate was then injected. The wound was sealed with collodion and a compressing bandage applied. About a week later the injected ganglion was inspected and, if still found distended, again aspirated but not injected. Another compressive dressing was applied. Two days later, on reinspection, it was usually found obliterated.

In those cases which showed some distention at the second inspection, reinjection was necessary.

Ghormley and Stuck(11), from their experimental studies on bone transplantation, have made the following conclusions:

"1. Periosteal transplants in old animals do not produce new bone.

"2. Cortical transplants do not completely die but unite slowly with the bone of their host, and decreased calcification is seen roentgenographically at the end of three months.

"3. Cancellous bone unites more quickly and more firmly than cortical bone, whether taken from the cancellous bone of the ileum or from the endosteum of the tibia. It gives evidence of increased calcification roentgenographically at the end of three months.

"4. Animals placed on a decalcifying diet until the time of the transplantation gave evidence of decidedly more active production of new bone around the cortical and around the cancellous transplants."

MISCELLANEOUS

The question is frequently asked by both the patients and the physicians as to whether normal sensations will return in transplanted skin flaps and skin grafts, and when this return may be expected. In investigating this question. Davis and Kitlowski(12) have found the following:

"Cutaneous sensations return in flaps and free skin grafts after varying periods of time.

"There is a dissociation of the sensations of pain, temperature and touch in all of the types of transplants and these sensations appear in the order named.

"Recovery of sensations in flaps begins after one month and advances at about 1 cm. per month.

"Sensations in free whole thickness skin grafts appear in about six months and advance at the rate of about 0.5 cm. per month.

"Sensations in split skin grafts appear in about seven or eight months and advance at the rate of about 1 cm. in three months.

"Sensations in Ollier-Thiersch grafts appear in about one year and advance at the rate of about 1 cm. in six months.

"The character of the surrounding skin and the nature of the base influences the rate of regeneration of sensations.

"Age is not a factor in the recovery of sensations in transplants.

"The clinical importance of the fact that the nerves regenerate in skin transplants is that sensations of pain, temperature and touch may be essential to accurate function, and also may be necessary for the protection of the transplant from injury and infection.

"We are inclined to believe that the theory propounded by Head is probably correct."

Purks(13) made a detailed analysis of the cause of death of patients with organic heart disease subjected to surgical operation. These were compared to sixty non-cardiac patients who died following operation at Peter Bent Brigham hospital. Infection was the most common cause of death in both groups. He found that in the well treated cardiac, congestive heart failure was not a significant factor in the causation of death following operation. The cardiac group differed from the non-cardiac chiefly in the presence of fatal coronary occlusion and in the greater incidence of fatal pulmonary complications. chiefly infection and pulmonary embolism. Whereas the sixty deaths in the cardiac group resulted from 494 operations on 414 patients, the deaths in the non-cardiac group represented the mortality (3.7 per cent) from approximately 1600 operations.

BIBLIOGRAPHY

1. Lahey, F. H., and Hurxthal, L. M.: Postoperative End Results in Three Hundred Thyrocardiacs; Amer. Jour. Surg., May, 1934, 24, 225-231.

2. Van den Bergh, H. J.: Hypothyroidism: Its Relation to Convalescence Rate and End Results Following Surgery; Amer. Jour. Surg., February, 1934. 23, 335-338.

3. Hinton, J. W., Morton, P. C., and Weeks, C.: Experimental and Clinical Studies of the Relationship of Thyroid Disease and Pancreatic Function; Ann. Surg., Jan., 1934, 99, 126-140.

4. DeCourcy, J. L., DeCourcy, C., and Thuss, O.: Subtotal Bilateral Suprarenalectomy for Hypersuprarenalism (Essential Hypertension); J. A. M. A., April 7, 1934, 102, 1118-1122.

5. Lindskog, G. E., and Bradshaw, H. H.: The Reinflation of the Atelectatic Lung; J. Thoracic Surg., April, 1934, 3, 333-340.

6. Ehrlick, W., Ballon, H. C., and Graham, E. A.: Superior Vena Caval Obstruction With a Consideration of the Possible Relief of Symptoms by Mediastinal Decompression; J. Thoracic Surg., April, 1934, 3, 352-364.

7. Abel. A. L.: Primary Carcinoma of the Liver; Brit. J. Surg., April, 1934. 21, 684-700.

8. DeCourcy, J. L.: Resection of the Presacral Nerve for Dysmenorrhea; Amer. Jour. Surg., March, 1934, 23, 408-412.

9. Davis, L. and Cleveland, D. A.: Experimental Studies in Nerve Transplants; Ann. Surg., February, 1934, 99, 271-283.

10. Kaplan, E. B.: Treatment of Ganglion; Amer. J. Surg., April, 1934, 24, 151.

11. Ghormley, R. K., and Stuck, W. G.: Experimental Bone Transplantation; Arch. Surg., April, 1934, 28, 742-770.

12. Davis, J. S., and Kitlowski, E. A.: Regeneration of Nerves in Skin Grafts and Skin Flaps; Amer. Jour. Surg., May, 1934, 24, 501-543.

13. Purks, W. K.: The Cause of Death in Patients With Organic Heart Disease Subjected to Surgical Operation; Ann. Int. Med., Jan., 1934, 12, 885-894.

HIS VISION OFF

Optician: "Weak eyes, eh? Well, how many lines can you read on that chart?"

Patient: "What chart?"

—Carnegie Tech. Puppet.

CLINICAL TIPS

You can't blame the doctor. The more he scares you. the more wonderful he seems when he cures you.

You can tell when a man is very sick. He doesn't think it necessary to groan louder when the doctor arrives.

A normal patient is one who waits five hours to call the doctor and then raves if he isn't there in 10 minutes.—Fountain Inn Tribune.

DISCUSSION TO DR. ROWE'S PAPER ON THE STATUS OF IRRADIATION OF LIVING TISSUE. IN THE JULY NUMBER

DISCUSSION

JAMES F. KELLY, M. D. (Omaha): It was indeed a great pleasure to hear Dr. Rowe's paper. It was full of fundamental facts concerning both the theory and practice of radiology. As he stated, radiation therapy is only thirty-eight years old. Seldom do we take that into consideration when we evaluate the results obtained. However, the principal thing in connection with the duration of the use of radiology is the fact that too many of us fail to appreciate, when evaluating radiation therapy, that many of the poor results which we have observed in the past are the results of work done by pioneers in a very difficult field. If we stop to realize that much of the radiation therapy we have been observing during the past few years is pioneer work, I am sure that we will have a more lenient attitude toward some of the cases which we have been citing in the past to prove that radiation therapy is of no value.

I am sure that no radiologist wants you to forget the sad experiences which some of your former patients have had following radiation, but as indicated in Dr. Rowe's paper many advances have been made in both the physical and biological aspects of radiation therapy and that radiation therapy today is not only a method requiring one to know some fundamental knowledge of physics and biology, which are guides in the estimation of dosage, but one must also have a clinical knowledge of cancer so as to acquire the art of applying this dosage. The fundamental facts in physics and biology are straight science. The application of the treatment is art and one must have both the art and the science if he is to be a successful practitioner in radiology as well as he must have art and science if he is to be a successful internist, surgeon or any other type of practitioner. How many specialties only thirty-eight years old are there that can show the advances made compared with radiation therapy?

Dr. Rowe started out with the science of biology, and stated radiation therapy is based scientifically upon biology and physics. In 1811 Grothes announced his law that the cell is affected biologically in proportion to the amount of light which it absorbs. No attention was paid to that and in 1848, Dr. Draper again brought that law to the attention of the medical profession. Of course, very little value was placed upon it until Roentgen realized he had the x-ray. With this, considerable attention was turned to radio-active substances and their influence on living matter. Since then much has been learned and great improvement has been made in radiation equipment. X-ray and ultra violet lamps have undergone considerable change. Madame Curie discovered radium.

So today we have a fairly accurate knowledge of production and control of the rays in the invisible portion of the spectrum—the short end. The use of a dosimeter or ionizing chamber to register the dosage is a far cry from the old gas tube, where you did not know whether you were using 40 K. V. or 100 K. V. when operating. With the dosimeter, we know not only what we are giving, but we know approximately the wave lengths we are using. The international roentgen unit is now used the world over. With its use and our increased knowledge of the biological problems presented, there is no reason why radiation therapy should be considered as still in the experimental field.

It is true there are many clinical problems still unanswered. We know certain cells are quite radiosensitive, and others are relatively radio-resistant, but we are rapidly clearing up that problem. With the use of the Angstrom unit to guide us in wave length selection the use of the dosimeter and with better clinical observation of what takes place, I am sure we will avoid a majority of the ill effects that followed early radiation therapy. We are at present in an almost entirely new field with better clinical guides and improved methods of administration.

Dr. Rowe brought out the fact that radiation therapy is as much a science as an art. That is the thing to keep in mind.

The radiologist has available as many variations in x-ray prescriptions as the usual practitioner has in his various forms of medication for the varied conditions he meets in his routine work. No two diseases are alike in every individual and any practitioner knows this. The present day radiologist, as indicated in Dr. Rowe's paper, also realizes that no two diseases are alike in every instance in all patients.

Two clinical factors stand out, one is the type of lesion to be treated and the other the peculiarities of the individual in whom it is to be treated. For instance a basal cell carcinoma without any cystic elements in it is an entirely different lesion than a basal cell carcinoma with cystic elements. In this instance we have a variation of what is termed a single disease, basal cell carcinoma. Then again we can take a squamous cell carcinoma of the cheek in a relatively young subject and a squamous cell carcinoma on the cheek of an individual well on in years with an underlying pernicious anemia. Here we have the same disease, but in two different types of individuals.

It would be extremely foolhardy for any radiologist to say "I give such and such in my cases of basal cell carcinoma" or "I give such and such in all my cases of squamous cell carcinoma." Any one who attempts to practice radiology using fixed factors for various diseases is no more successful than the practitioner in other lines who tries to use fixed methods of treatment to meet certain conditions. The surgeon would be amazed if you insinuated that he treated all cases of appendicitis alike. Many of them, however, believe that any technician may administer the dosage in x-ray after a partial diagnosis has been made. It is not well to speak by comparison but that often serves to illustrate a point and the point I am trying to make is the point that Dr. Rowe so ably brought out in his paper that radiology today scientifically is based upon a knowledge of physics and biology, but practically it rests upon a knowledge of clinical facts and their bearing upon the effects of treatment in a given case.

It requires as much clinical knowledge and judgment to proceed with radiation therapy today as it does to successfully treat any other type of lesion which in itself is not of a self-limited character. We know that many diseases, barring complications, run a self-limited course and require but little positive therapy. This is not so in dealing with even the mildest form of malignancy. Something positive and something definite must be done in every instance if any satisfactory result is to be secured and the positive therapeutic measures we have at our disposal today in the fight of cancer are x-rays, radium and surgery.

H. B. HUNT, M. D. (Omaha): We are all indebted to Dr. Rowe for his scholarly resume covering the foundations of modern radiation therapy. Great progress has been made in clinical radiotherapy during the past 15 years through the utilization of standard methods of dosimetry, augmentation of the differential selectivity of radiation against diseased tissue with relative preservation of normal tissue, improved knowledge about the tolerance of normal tissues and diseased tissues, and the individual adaptation of herapy to the particular lesion and patient. The nodifications in technic appear to have been directed oward the delivery of a greater percentage of the surface dosage into the depths of the lesion, the slow dministration of repeated small doses of radiation ver a period of 3 to 6 weeks, giving a large total dosge approaching the tolerance of normal tissue in treatment of certain neoplasms. Increased depth delivery has been accomplished by the more general use f multiple ports of delivery, longer tube-patient distances, the use of adequate voltages and elimination of the less penetrating rays by means of thicker filters.

These modifications in technic add greatly to the expense of administering radiation therapy. For example, the milliampere minutes, or time of treatment in going from factors of radiation energized by 200,000 volts filtered through ½ mm. copper, from a distance of 30 cm. delivered through one port sufficient to produce a skin erythema at one sitting would be about 1/200 the milliampere minutes or energy output required to produce anerythema with a daily administration of a small dose over each of four ports over a period of 25 days by means of radiation energized by 200,000 volts, filtered through 2 mm. copper, given from a distance of 70 cm. Furthermore, the labor of preparing the patient for treatment is correspondingly increased in that 100 individual "setups" are required in the place of 1 "setup" required where the total dosage is administered through one port at one time. It is, therefore evident that utilization of the modern methods outlined by Dr. Rowe require a far greater investment of time, money and energy by the radiotherapist, and at least of time by the patient. Results justify the effort in cases where there is even remote promise of permanent arrest of malignancy.

A. P. OVERGAARD, M. D. (Omaha): This paper is timely and gives a fine review of the steps we have covered in radiation therapy during the last twenty-five years.

The r unit today gives us all confidence in our dosage which produces very satisfactory results. I believe that this is the greatest aid that has been made to radiation therapy in the last decade.

Heavy filters with protracted time element will now produce a high degree of permanent results and places radiation therapy in a class by itself.

R. W. FOUTS, M. D. (Omaha): The question of what happens to tissues when x-rays are projected upon them has been pretty well answered. I believe it is the consensus of opinion among physiologists and biologists who have gone into a study of the question that there is little difference in the effect upon the cell of the different wave lengths of rays that reach that cell. It is a question of being able to project or produce a ray of proper wave length, or penetrating power, to reach the cell. It is not the ray that passes through the individual cell that produces the biological effect upon the cell, but the ray that has spent itself, or just reaches the cell. As Dr. Rowe expressed it, it breaks up into secondary rays, and it is these rays that produce the biological effect of x-ray upon the tissues.

It has been proven, as was stated, that 200 K. V. is sufficient to treat. With this voltage you can penetrate any tissue or body you are called upon to treat. It is a question of delivering the proper dose with the proper filtration.

The longer I treat with so-called high voltage, the less high voltage I use. I started twelve years ago, and used 230 K. V. after the tube became seasoned. I am now treating many more cases of so-called deep therapy at 160 or 180 than at 200 K. V., and my clinical results justify the downward trend.

I have enjoyed the paper and think it covered the subject entirely.

E. W. ROWE, M. D. (closing): I wish to thank my colleagues who have discussed the paper.

I am firmly of the opinion radiology is one of the major specialties in medicine. It has a future. We do not know what lies ahead in medicine. We know a good deal has passed under the bridge in the past forty years. Time is only relative. If we can leave out the chronology of the years, I think we would say it is a mature specialty and has accomplished a great deal for the time it has existed. Also, it shows the practice of medicine is as much an art as a science. With both ideas in mind we must use the tools at hand. It is the patient we are trying to help, or at least to palliate.

ELECTRIC ARC WELDING—AN ETIOLOGICAL FACTOR IN APLASTIC ANEMIA

O. C. NICKUM, M. D.,
Dept. of Medicine—University of Nebraska College of Medicine,
Omaha, Nebr.

"Aplastic anemia may be caused by certain intoxicating agents, chief among which are benzol, radium, x-ray, trinitrotolnol and arsphenamine. Occasionally it is associated with severe chronic sepsis, tertiary lues and arteriosclerosis; and recently nephritis has been shown to play in etiological role. Probably the best known examples of the exhaustive type of this anemia are seen in the terminal stages of pernicious anemia and in some cases in which the loss or destruction of blood is continued. The bone marrow shows aplasia of red marrow with fatty or fibrous replacement. Small areas of compensatory hyperplasia occasionally occur. The blood is deficient in red cells and hemoglobin but no hypochromia is present. Lymphocytes predominate, although leukopenia is invariable and thrombopenia marked. A prolonged bleeding time and poor clot retraction are characteristic. Aplastic anemia is frequently seen in young people and may run a very rapid course." The above is taken from the section by Paul Reznikoff in the latest edition of Cecil's *Textbook of Medicine*, and from a comparison with other texts and the recent literature represents a complete concise statement of the known factors related to this type of anemia. The following case report is offered in evidence of the idea that in the flux or rod coatings used in the process of electric arc welding there is a chemical which is capable of producing degeneration in the blood picture.

This man, M. A., age 54, blacksmith, entered the out-patient clinic of the University of Nebraska College of Medicine, July 17, 1933. Complaints on admission were extreme fatigue, dyspnoea, headaches, tinnitus, increasing pallor, anorexia, loss of ten pounds in the past thirty days and recurrent nasal hemorrhages. He described himself as being entirely well until eighteen months ago when the above symptoms appeared in minor degree and progressively increased in severity until June 17th, when a bilateral epistaxis lasting five hours and requiring packing occurred, after which time he became a bed case at home. Nasal bleeding had occurred on five or six other occasions during the six months just preceding but in spite of this and the symptoms he had continued to work regularly, even putting in many hours of overtime. The first examination showed a count of 560,000, Hb. 14%, and white 900; polys 36%, staph 17%, and lymph 45%, with variation being marked in the size, shape and staining and a 1.4 color index. Wassermann and urinalysis negative. He was tentatively diagnosed pernicious anemia although no glossitis or cord changes were evident, and was prescribed for accordingly, being placed on the outcall service to await hospitalization. Was admitted to University Hospital on July 29th, with blood picture little changed by the 10 days therapy. Transfused 500 cc and on next day count became 900,000 and 21% Hb. with reduction in exhaustion picture. Second transfusion 380 cc two days later with count the following day showing 1,180,000 and 21% Hb. and reticulocyte from 0.1% to 1%. Two other transfusions were given with the high point of response to therapy being 1,400,000 and 25% Hb. on August 17th, platelet count 75,000, reticulocyte 3.6%. Blood cultures negative. Van den Bergh faintly positive. Free HCl found on several occasions, also no cord changes or glossitis and the agreement of several consultants was aplastic anemia although liver intravenous and Dil. MCl were continued throughout his stay. Chest x-ray showed heart to occupy 54% of transverse diameter of the thorax. X-rays of long bones negative for metastatic invasions. In spite of what was done he became progressively worse and died on September 22, 1933. Autopsy report showed no findings not related to the recent aplastic anemia. Fatty degeneration of the heart and of the liver, spleen showed no abnormality, bone marrow of femur and ribs examined showing the former yellow through a part of the portion opened, while other areas showed hemorrhage. Microscopically only occasional areas of erythropoietic activity could be found al though granulopoietic activity was quite common throughout, also some hemorrhage which appeared recent and had not damaged the bone marrow excessively. No other changes noted.

This man's living habits were all favorable to good health. He used no tobacco nor alcohol, and his personal past history was irrelevant, also no clinical or autopsy evidence of any other type of illness existed. His mother and father are living and well, and there is no evidence of family tendency to blood dyscrasias. He had been a blacksmith for a construction firm for years and was accustomed to long hours of heavy work without fatigue and had done acetylene welding for some time without symptoms. The purchase of the arc welding equipment was just two years before the gross hemorrhage which caused him to stop work. He was the only workman of his type in the plant, doing all of the welding and in an unventilated section of the shop. The onset of the minor symptoms began with the use of the machine and varied in severity with the length of time he spent on each particular job and also with the type of welding rod used. In warm weather with large doors open at both ends of the shop he had less headache and lassitude and when the air was stagnant or when he worked inside of scoop shovel buckets, etc., they were much more marked. On occasions when he was not crowded for time and could use a bare steel rod there were no resultant symptoms, but with the coated rods he noticed variations in the color and amount of the "smoke" and the more effective the rod coating was for speeding the welding process the more symptoms followed. One type highly boosted by its makers as a speed rod he seldom used because of the reaction; brass rods also were intolerable. The manufacture of these rods is entered into by all major electrical companies and a few local concerns but the efforts made to keep their composition a trade secret does little to help an investigation. One local maker gave the information that sodium fluoride, copper sulphate, phosphorous, arsenic, had been used singly or in various combinations in a base of wood pulp or asbestos. With little known of the possibilities the chemical analysis of tissues and excreta in the above case added nothing, however, a review of the entire case shows a picture of tissue destruction quite similar to phosphorous poisoning.

In an attempt to determine what the involved chemistry might be, brief summaries of the case were sent to the U. S. Public Health Service and to the official publication of the American Chemical Society, Industrial and Engineering Chemistry, and to the department of questions of the *Journal of the American Medical Association*, and the following information was received. The Senior Physicist of the Public Health Service verified the statement of the Omaha manufacturer that the substances that he mentioned were quite generally used by other manufacturers. H. E. Howe, editor of Industrial and Engineering Chemistry, responded in the following manner: "I am really obliged to you for your letter of February 6, as it brings to light an industrial hazard of which we might have thought but which had not been considered in this office. At the moment we have no information to offer but we will begin inquiry immediately and hope to find something which we can forward. If we are unable to locate any information we shall call attention to the problem editorially and see if some investigations cannot be undertaken. We will endeavor to keep you informed as to the progress of our inquiry." The *Journal A. M. A.*

responded by saying that in the absence of having demonstrated the presence of any of the known chemical causes of aplastic anemia the case impressed them as only a coincidence and not definitely attached to occupation.

So it seems to be without precedent, however, inasmuch as the idea that waste products of welding might be a causative factor came to mind after the man had been away from his work for two months it would hardly be expected that chemical determinations would be very informative. Although a definite etiological contribution is not made in this case the possibilities for its repetition will be increasingly more numerous with newer types of construction and the cause and effect relationship seems so certain that it is being reported rather than allowed to slip into the idiopathic grouping in the expectation that someone in the field of industrial medicine can prove or disprove the reasoning offered. The minor symptoms are not peculiar to this case but occur to many welders, and one important manufacturer of welders' oxygen reports that welders as a class are not prone to stay long at their trade.

TREATMENT OF SCARLET FEVER WITH ANTITOXIN

The results of Luke W. Hunt, Chicago (*Journal A. M. A.*, Nov. 4, 1933), in 2,303 cases of scarlet fever of different degrees of severity, in 882 of which scarlet fever antitoxin was administered indicate that: 1. Scarlet fever antitoxin exerts a favorable influence on the clinical course of the disease. This is evidenced by a lessened severity of the febrile stage of the disease, on the course and duration of the fever, and on the extent and duration of the skin lesions. 2. Complications are less frequent in patients treated with an adequate dosage of scarlet fever antitoxin. 3. Almost all the complications that occurred in the series in which antitoxin was administered appeared in patients who received the antitoxin relatively late in the disease. 4. As in diphtheria, the best results in the treatment of scarlet fever with antitoxin on the clinical course of the disease and the prevention of complications are obtained when the antitoxin is given early in the course of the disease and in sufficient dosage. 5. Serious complications often develop from mild cases of scarlet fever treated without antitoxin. 6. Serum reactions occurred in 22.7 per cent of the patients of the series or in 20.8 per cent if those with a history of previous administration of serum are excluded. They were not more severe and were less frequent than after the use of diphthria antitoxin.

ROSTER OF OFFICERS—1934

Joseph Bixby, Geneva, President	1934
C. A. Selby, North Platte, President-elect	1935
George L. Pinney, Hastings	1935
William Shepherd, Rulo	1935
R. B. Adams, Lincoln, Secretary-Treasurer	1936

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1936
W. R. Boyer, Pawnee City, Chairman	1936
R. J. Lehnoff, Lincoln	1936
E. L. Brush, Norfolk	1936
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1934
D. D. King, York	1934
W. J. Douglas, Atkinson	1934
R. D. Bryson, Callaway	1935
L. W. Rork, Hastings	1935
C. A. Selby, North Platte	1935
A. L. Cooper, Scottsbluff	1935

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1934
B. F. Bailey, Lincoln	1935

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
E. G. Zimmerer, Chairman Medical Section	Lincoln
Morris Nielsen	Blair
W. J. Arrasmith, Chairman Surgical Section	Grand Island
J. W. Duncan	Omaha

CANCER COMMITTEE

James F. Kelley, Omaha, Chairman	1939
Geo. Covey, Lincoln	1938
W. C. Harvey, Gering	1937
John Buis, Pender	1936
J. M. Willis, McCook	1935

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
L. F. Egan	Hastings
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor..........Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman..........Madison
A. F. Tyler..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex Officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. 19 September No. 9

THE PROBLEM OF THE INEBRIATE AND OF THE DRUG ADDICT IN NEBRASKA

Some years ago the Nebraska legislature enacted a law providing that habitual drunkards and drug addicts could be committed to the Lincoln State hospital for custody and treatment.

Under this statute, commissions of insanity have in the performance of their duties committed numerous persons properly brought before them.

In from thirty to sixty days such patients were discharged from the hospital, many, apparently in no better condition than they were when committed by the commissions of insanity. Some released patients admitted that they obtained liquor before leaving Lincoln for home. Many of them again became drunk on the first opportunity after reaching their home community. Many persons have doubts about the policy of committing persons for such treatment believing it to be a farce. Early this year the authorities at the Lincoln State hospital declined to receive inebriates for custody and treatment on the basis of want of room. By many out in the state this was considered just as well, since the custody and treatment did not seem to show any resulting benefit.

Inquiry of the hospital authorities, on the contrary, brings an encouraging reply which we are pleased to publish herewith:

"We have had many very satisfactory results from treatment given inebriates and drug addicts in this hospital. It is not true that all o them have been failures. It is true, however, that a good many of them are failures because the patient does not want to cooperate and has no desire to be cured.

"It is often the case that a person while under the influence of alcohol or drugs commits some misdemeanor and the county officials, instead of prosecuting him according to law, allow him to come to the hospital to take the cure for his habit. This man comes here with a sense of prosecution and feels that he has served a jail sentence. Hence, of course, the treatment does him no good.

"There is no treatment that we know of which can be given that will entirely correct the inhibitions that individuals have regarding these things, as we point out to you in the description of this treatment. The only thing that can be done is to put the person in condition so that he can get along without the use of these stimulants if he will use his will power. You can no more cure a mind of this sort from these habits than you can an insane patient from his ideas of being persecuted and I think the lack of courage of the addict to not want to be reformed nor want to be cured is the reason more of them do not obtain any benefit from the treatment. The same thing holds true in regard to the curing of the addict as has held true regarding the prohibition question all over the United States.

"Lambert-Towns Treatment: Remembering that all inebriates are toxic and that an attack of drunkenness is a period of exacerbation of this toxemia, the treatment must necessarily be largely eliminative. The patients received in the Lincoln State hospital are immediately put to bed and in the ordinary run of cases are immediately put upon the Lambert-Towns Treatment, the principal use of which is that mentioned above. Sedatives are used in cases where this is found necessary and the alcohol is withdrawn completely.

"The prescription used in this treatment is:

Tincture Belladonna	Oz. 4
Fluid Extract Hyoscyamus	Oz. 2
Fluid Extract Xanthoxylum	Oz. 2

"Six to eight drops of this mixture are given every hour, day and night, until either the patient shows symptoms of belladonna excess or with the cathartics about to be described the patient has a certain characteristic stool. This dose of the mixture is increased by two drops every six hours until fourteen to sixteen drops are be-ng given. It is not increased above sixteen drops.

“Usually four compound cathartic pills (U.S. P.) are given at the time that the specific is begun. After the mixture has been given for fourteen hours a second dose of C.C. pills is given, the dose depending upon the amount of action obtained through the use of the previous dose. At the twentieth hour a third dose of C.C. pills is given and after these have acted, should the patient begin to show abundant green movements, an ounce of castor oil is given and a few hours later a characteristic thick, green, mucous, putty like stool will appear. The mixture is usually continued and at the thirty-second hour still another dose of C.C. pills is given and a few hours later a second dose of castor oil. The mixture is then discontinued.

“In connection with this treatment, stimulants and hypnotics are used as indicated. Care is used to prevent belladonna poisoning, an effort being made to approach the maximum dose as nearly as possible without these unwanted symptoms.

“This treatment is remarkable in that it puts a patient on his feet with no symptoms of acute alcoholism present and rapidly returns him to normal.

“Upon the completion of the Lambert-Towns treatment the patients are allowed to get out of bed, are given their clothing and are sent daily to the Hydrotherapeutic Department where an electric cabinet bath, shower. and salt rub are given. At the same time they are given some occupational activity such as light work in the laundry or chicken ranch.

“This treatment attains all that is claimed for it. The patient rapidly becomes non-toxic and no immediate desire for alcohol is experienced. Several weeks withdrawal of alcohol certainly should prove to any thinking individual that it is possible for him to be happy, useful and remain in good health without the use of alcohol and it is very common for inebriates to make the statement that they never felt better in their life than they do immediately after this care. Of course, inherent lack of inhibitions are something that we cannot improve upon nor is any claim made that this treatment does this.

“A very remarkable thing about this treatment is the great absence of delirium tremens. Only occasionally is a case of delirium tremens seen in our hospital, while in the past they were much more common.”

THE FAMILY DOCTOR AND THE CHANGING ORDER: PRESIDENT'S ADDRESS

Walter L. Bierring, Des Moines, Ia. (*Journal A. M. A.*, June 16, 1934), in his presidential address, states that a new sort of clientele is emerging for the doctor of the future that will call for all the social and intellectual adaptability at his command. In this new order of society there is a call for a different type of family doctor or general practitioner than was required a generation ago. Although of somewhat different mold, he will be the central figure in the field of medical practice as in the ages past. He is the basic doctor of tomorrow and of the new order. It is for him that medical faculties will be enlarged, courses of study extended and physical equipment utilized to the highest degree. He will approach the threshold of medicine with a broad cultural training in the natural sciences and the humanities, so that he can read aright the faults of heredity and the laws of eugenics, to interpret more readily the problems underlying the biologic delinquencies which constitute the greatest burden of modern society. The number of specialists may be somewhat more limited in the future, but they will be distinctly of a higher order. The specialist in any particular field from now on must furnish qualifications that have passed the scrutiny of his peers. The family doctor and the highly qualified specialist will be the medical pioneers of tomorrow and are destined to preserve the highest traditions of our guild. With the pendulum swinging toward a balanced population, it will be clearly evident that the time is coming, and not far distant, when the principal function of medical service can be effectively furnished by half the number of medical graduates that we now have. The wise selection of fewer students can well be left to the educational faculties. It is now well recognized that the yardstick of basic qualifications is not confined to academic grades for it is more important and fundamental that the prospective medical student have those attributes of personality characterized by an alert imaginative mind, physical and moral vitality, honesty. loyalty, resourcefulness and adaptability. He must be the kind of person who can deal effectively with sick lives as well as damaged organs or impaired physiology.

LOW BRIDGE

Patient: “My wife tells me I talk in my sleep, doctor. What should I do?”

Doctor: “Nothing that you shouldn't.”—Tit-Bits.

ABOUT VITAMINS

That there are some accessory food factors, unknown in composition but essential to health, has been known for many years. Early in the 19th Century, lime juice was used in the British Navy to prevent scurvy. Hence came the name "limey" for the English sailor. Scurvy became a rare disease in the Royal Navy and the ease with which it could be prevented doubtless delayed a rigorous search for its cause. This was not the case with beriberi which was exceedingly prevalent in the Japanese Navy. Between 1878 and 1882 the number of cases ranged from 25 to 40 per cent of the entire personnel. In 1885, Takaki modified the ration by substituting barley for a part of the polished rice, and the disease practically disappeared. Search for the cause continued, however, and in 1911, Funk isolated from rice bran a substance apparently an organic base but not an alkaloid, which he believed to be the anti-beriberi agent and called it vitamine — "life amine."

It is a far cry from this epoch-making paper to the status of our knowledge of nutrition today and much painstaking toil has gone into its creation. At present six different vitamins are recognized—A, B, C, D, E, and G. In the light of the remarkable advances made in recent years, no one will assume this list to be final. In fact, recent work by Sherman indicates that G is a complex.

Without Vitamin A, the young cannot grow. It is also known as the anti-infective vitamin. Its absence lowers the vitality thereby offering a greater susceptibility to infections, particularly of the respiratory tract. Vitamin B is called the anti-neuritic vitamin. Its absence from the diet causes loss of appetite, derangement of the nervous function, arrest of growth and other disorders. Vitamin G is associated with B. Without it there results retardation of growth, disturbances of the nervous and digestive systems and lowered vitality. It is believed but not absolutely proved that pellagra is due to deficiency of Vitamin G. Vitamin C is the anti-scorbutic and Vitamin D the anti-rachitic vitamin. Vitamins C and D also have considerable influence over the metabolism of Calcium and Phosphorus thus affecting bone and tooth formation. Records of some of our leading dental infirmaries have shown that the lack of these vitamins in the diet is concomitant with caries. The recent work of Mellanby in England has produced a preponderance of evidence that tooth structure is dependent on these factors. Vitamin E prevents sterility in rats but there is as yet no data to show that it plays any part in human reproduction.

HANDY REFERENCE TABLE

VITAMIN	Descriptive Name	Potent Sources
A	Anti-infective Anti-ophthalmic	Cod liver oil, carrots, tomatoes, butter, egg yolk, whole milk
B	Anti-neuritic Anti-beriberi	Yeast, whole cereals, egg yolk
C	Anti-scorbutic	Citrus fruits, leafy vegetables
D	Anti-rachitic	Sunlight, cod liver oil, egg yolk
E	Anti-sterility	Wheat germ, lettuce
G	Anti-pellagric	Yeast, glandular organs, lean meat

Vitamins A, B, and C have been prepared in what is believed to be the pure state, and their molecular structures are being rapidly deduced. It is fair to assume that their synthesis is not far in the future.

Our rapidly increasing information in regard to deficiency diseases now includes evidence that there are many instances of latent avitaminosis which hitherto have gone unrecognized. The recognition of "subacute" or "latent" scurvy is an example of this.

Recently Sherman has shown that the same diet which is adequate in every respect for the maintenance of life, may, by enrichment with additional amounts of the vitamins, actually induce a very significant increase in longevity. This is the first concrete evidence we have, that longevity is not solely dependent on heredity.

There is, however, another side to this picture and herein lies the danger of self-medication by the layman. It has been proved that with vitamins as with many drugs, the "dosis therapeutica" soon passes into the "dosis toxica." Excess of Vitamin D leads to marked pathological and chemical alterations in the tissues and recently a pathological state called "hypervitaminosis A" has been described in young rats. This disease is characterized by skin disorders, inflammation of the eyes, spastic contractures of the extremities and cessation of growth. Unless relieved by stopping the administration of the vitamin it ends in death. Fortunately, these conditions do not appear until many times the normal therapeutic dose has been given but it is obvious that, with e increasing purity of the preparations, the ly safe method of administration is under the rection of a physician.—(Selected).

DECLARATION OF POLICY OF THE HOUSE OF DELEGATES OF THE A. M. A.

1—All features of medical service in any method of medical practice should be under the ontrol of the medical profession. No other body r individual is legally or educationally equipped exercise such control.

2—No third party must be permitted to come etween the patient and his physician in any medical relation. All responsibility for the charcter of medical service must be borne by the rofession.

3—Patients must have absolute freedom to hoose a legally qualified doctor of medicine who ill serve them from among all those qualified practice and who are willing to give services.

4—The method of giving the service must reain a permanent, confidential relation between e patient and a "family physician." This retion must be the fundamental and dominating eature of any system.

5—All medical phases of all institutions inolved in the medical service should be under rofessional control, it being understood that ospital service and medical service should be onsidered separately. These institutions are but xpansions of the equipment of the physician. He s the only one whom the laws of all nations ecognize as competent to use them in the deivery of service. The medical profession alone an determine the adequacy and character of such nstitutions. Their value depends on their opertion according to medical standards.

6—However the cost of medical service may e distributed. the immediate cost should be orne by the patient able to pay at the time the ervice is rendered.

7—Medical service must have no connection ith any cash benefits.

8—Any form of medical service should include ithin its scope all qualified physicians of the ocality covered by its operation who wish to ive service under the conditions established.

9—Systems for the relief of low income lasses should be limited strictly to those below he "comfort level" standard of incomes.

10—There should be no restrictions on treatment or prescribing not formulated and enforced y the organized medical profession.

A DART AT A. M. A. LEADERSHIP

"Of course, the American Medical Association is the logical body to sift out the chaff from all the pabulum that has been offered and present a workable plan for the relief of a sorely beset profession and an equally distraught public. Will it do so? We doubt it. Momentarily aroused from its lethargy by the prick of the lance of the insolent College of Surgeons it cerebrated long enough to produce its Ten Commandments, but its Moses in the Wilderness will not lead his chosen people anywhere until he spends less time trying to prove that the British Medical Association and its members are dissatisfied with the rope that Lloyd George threw them, which is not true, and more in a constructive analysis of existing and proposed methods for ameliorating our distressed condition. With the organization and means it commands it does seem that our national association might get somewhere in this matter. For years it has had the united support of its entire membership, gathered from the cream and energy of the profession and even now, with dissatisfaction brewing and manifest hither and yon it only seems to rouse its massive head long enough to bark out a few platitudes and then sink back in the sleek satisfaction of a long and honorable record of suspended animation."

One of these days America will produce its own Lloyd George. To socialize medicine will afford someone the most magnificent political opportunity that the dumbest paranoid in Washington could covet and will he grab it? We with our few little cohorts will be swept aside and someone not of our breed and color will hand us the rules and regulations and we'll just have to take it. Perhaps it will be something suited to our needs and we will get along with it fairly well, like our British brethren do with the National Health Insurance. Perhaps not. Anyway it will not be our baby but we shall be forced to adopt it, just the same. It will be just too bad.—(G. C., in Lancet-Clinic).

ROSENOW SERUM IN INFANTILE PARALYSIS

Encouraged by the results obtained in 1113 cases of poliomyelitis by Rosenow and Nickel and reported in 1927, Ellsworth Moody and Cora Hesselberg used the Rosenow serum in 15 cases, and though the serum was not administered until paralytic symptoms were well established, it was given freely (20 to 120 cc.) by intramuscular injection, and as a result the paralytic symptoms were completely overcome in 13 of the 15 patients; and of the other two, one who had had complete muscular paralysis was so far improved that only paralysis of one shoulder remained, but the other, a case of complete leg paralysis that had lasted six days before serum treatment was begun, still needs crutches and braces. In all cases treated, pain, hyperesthesia, headache and fever disappeared promptly. The writers state that the evidence in these cases seems to indicate that daily Schilling blood counts may be of value in indicating the need or lack of need of further serum treatment.

The paper by Moody and Hesselberg appears in the January, 1934, issue of *Archives of Pediatrics*.—(Therapeutic Notes).

WHY AN AUXILIARY?

The question "why an auxiliary" is not infrequently asked. The question "why a wife" constitutes as good an answer as any.

Medical organization went on for nearly a century in a state of single blessedness. Like an old bachelor it never seemed to realize that it was doing many odd jobs which could be done by a helpmate and that its standing in the community was being sorely neglected. Then one spring morning some ten years ago came a comely miss, who announced herself as Mrs. Auxiliary, rolled up her sleeves, nudged Mr. Medicine in the side, and said "shove over—I'm going to pitch in, help get your house in order, and I'm going to be your partner."

The old fellow, unaccustomed to team work, grumbled and still sputters at times, but down in his heart realizes how efficient she has been. During the years she has grown and developed into a buxom housewife, on whom he has learned to depend more and more. She has been helpful in more ways than he realizes and she can do more and more for him as time goes on and he learns more to rely on her. Her main job is to improve his standing in the community. He has been a hermit and has covered up his sterling qualities and his good deeds. He has had few contacts with others and she can do much in bringing about a better appreciation of his work and of his worth.—(R. S., in Wisconsin Med. Jour.).

HOMEOPATHY, ALLOPATHY

The first word is derived from the Greek *omoios*, like, and *pathos*, suffering. This school of medicine teaches that disease is cured by remedies which produce on a healthy person effects similar to the symptoms of the complaint of the patient, the remedies being usually administered in minute doses. Milton must have had this method of treatment in mind when he says in his "Samson Agonistes": "So, in physic, things of melancholie hue and quality are used against melancholie, sour against sour, salt to remove salt humors." In this connection one recalls the Latin proverb *Similia similibus curantur*, "Like cures like." In pronunciation, the accent comes on third syllable. *Allopathy* (Greek *allos*, other, and *pathos*, suffering) is a system of medical practice which aims to combat disease by the use of remedies producing effects different from those produced by the special disease treated. The name was coined by Hahnemann, founder of *homeopathy*, to distinguish it from his own school of medicine. In medical circles *heteropathy* (Greek *eteros*, other, and *pathos*, suffering) is sometimes used as a synonym of *allopathy*.—(Kablegram.)

EDITORIAL PARAGRAPHS

The political campaign seems to be hotter than the weather has been.

Automobile fatalities the first six months of the current year total 12,270—a sizable army.

Legislation in New Jersey provides that charges for medical services shall be a lien on award for injury or illness.

The editor of the Indiana *State Medical Journal* published an editorial entitled "The Rape of the Tonsil." And he said something.

It is stated on purported good authority that the hospitals of New York City alone run on a yearly deficit of four and a half million dollars.

In 1933 England had 21 murders and 20 legal executions as exemplary punishment; in 1933 the United States had 11,000 murders and but a paltry few legal executions.

Brodie (*Science*, June 29, 1934, p. 594) has demonstrated that active poliomyelitis virus inactivated with formalin is antigenic. This may lead to an important new therapy for poliomyelitis.

We like to think of focal infection as a modern concept. Hippocrates found that there was relief from rheumatism after pulling an ulcerated tooth. He was the original focal infectionist.

Communications received during the last two months evidence an active interest of the medical profession in politics. In one county nine physicians endorsed a candidate from their county for congress.

In his presidential address before the Dakota State Medical Society, Dr. E. W. Jones of

Mitchell talked to the theme, "The practice of medicine is peculiarly the doctor's problem and there can be no practice of medicine without doctors of medicine."

"Vagabonding syphilis" is the way the Elizabeth, North Carolina, Independent, put it in an article, the gist of which is that transient labor employed in the harvesting of crops each season is responsible for the spread of and greater incidence of syphilis.

It is stated that the army needs medical men and that examinations will soon be held in various parts of the country to examine physicians in civil life for commissions in the army medical corps. Interested physicians should apply to the Surgeon General's office, Washington, D. C.

The Salem (Oregon) State hospital for the insane has perhaps forty acres of the most beautiful flower gardens to be found anywhere; but the patients are not allowed to enjoy this beauty. They are herded in an enclosure in another part of the grounds. One wonders what all this beauty is for if not for the unfortunate.

There is much evidence that the newly created cancer committee is going to function. The several members are taking the assignment seriously. Correspondence on hand indicates action and the membership of the association may expect to hear from the committee from time to time through the *Journal*.

The American Congress of Physical Therapy will have a four day session, September 10 to 13, at Philadelphia. Nebraska medical men participating in the program are Dr. A. F. Tyler, Omaha, retiring president; Dr. Victor E. Levine, Omaha; Dr. Roscoe Smith, Lincoln, Nebr., and Dr. I. R. Folsom, Lincoln, physicist to Lincoln General Hospital Cancer Clinic.

The scientific and medical world mourns the death of Madame Curie, July 4, 1934, at Sallanches, France. She was of Polish birth, named Marie Sklodowska. While studying in Paris she married a fellow scientist, Pierre Curie. Jointly they discovered the properties of radium. It is understood that she died from the effects of handling radium.

Three Blair, Nebr., physicians devised a cooling system for their offices. Salvaging old car radiators, the three doctors set them up in their office rooms. Cold water from a tap passes through the radiators constantly. An electric fan is placed behind the cooling system and the cold air is circulated through the rooms. The room temperature is lowered from 20 to 30 degrees, they report.

Wonder how the reader liked the special all-original-material in the August *Journal*. Speaking frankly, the editor did not like it, after it had happened. A valued lay friend wrote: "I hope the dear doctors enjoyed the August number. Personally, I missed the editorial paragraphs, the 'Human Interest Tales,' the discussions following the formal papers, and last, but not least, the squibs!"

A recent writer (Beverly Tucker) has described a physician: "He is an advocate without a jury, a judge without a court, a minister without a surplice, a business man without guile, a farmer whose soil is the human body and whose crops are human health and happiness, and he is a laborer without a loss. The physician is the best paid man in the world." Sounds pleasant, does it not?

Before us lies a circular letter addressed "To My Fellow Doctors" and signed "A Struggling M. D." It is a veiled attack against one of the candidates for governor because he took advantage of his undoubted right to admission, treatment and a physical check-up in the veterans hospital. No Nebraska physician wrote that copy. It is subtle propaganda put out by some opposing candidate. This *Journal* condemns such propaganda.

Dr. Irving S. Cutter, former dean of the University of Nebraska College of Medicine and at present dean of Northwestern University Medical School, Chicago, has assumed responsibility for the syndicated health column running in a number of daily papers, notably in Nebraska, in the World-Herald. The energy and briskness of Dr. Cutter scintillates in every article. The reader has not lost anything by the change from its former editor.

The newly built St. Mary's hospital, North Platte, has been opened by the Sisters of St. Francis. The hospital was built several years ago with private funds; but economic stress prevented its equipment and operation. An agreement was reached this spring with the Sisters of St. Francis that if the hospital were deeded to them, they would undertake its operation, which was done. It is understood that the several private hospitals of North Platte agreed to close and hereafter send their patients to St. Mary's hospital. Finally it is also understood that all the physicians are agreed in supporting the hospital.

The Second Annual Omaha-Midwest Clinic is announced for October 29-30-31 and November 1-2. Headquarters at the Paxton hotel. Distinguished guest speakers announced follow: Dr. Walter L. Bierring, Des Moines, President American Medical Association; Dr. Willis C. Campbell, Memphis, Orthopedic Surgery; Dr. Carl H. Davis, Milwaukee, Gynecology and Obstetrics; Dr. A. I. Folsom, Dallas, Genito-Urinary; Dr. W. H. Guy, Pittsburgh, Dermatology; Dr. R. H. Jaffe, Chicago, Clinical Pathology; Dr. Foster Kennedy, New York, Neurology; Dr. F. H. Lahey, Boston, Surgery; Dr. John O. McReynolds, Dallas, Eye, Ear, Nose and Throat; Dr. A. Graeme Mitchell, Cincinnati, Pediatrics; Dr. B. H. Orndoff, Chicago, Radiology; Dr. Cyrus C. Sturgis, Ann Arbor, Medicine.

The U. S. Department of Agriculture has inaugurated a campaign for the eradication of contagious abortion in cattle, also known as Bang's disease. Bang's disease, named after the eminent early Danish investigator of this malady, has caused serious losses to the livestock industry, particularly in dairy herds. The damage estimated at fully $50,000,000 annually results from lowered production and from the death of animals. The disease occurs in practically every part of the United States and estimates indicate that about 15 per cent of the entire cattle population is affected with the disease. Stock owners have long sought relief from the malady and have taken unusual interest in the results of research work dealing with its detection and control. The disease is related to undulant fever and the germ is related if not identical with the *brucella militensis* which causes undulant fever..

OBITUARY

Howard W. Quirk, Ashtabula, Ohio; Western Reserve University, 1882; practitioner at Crete from 1905 to 1928, operating a private hospital; specially interested in surgery; former active member, Nebraska State Medical Association, died July 25, 1934, aged about seventy-six years. Interment at Crete.

Rufus Harvey, National City, Calif., (retired); educational data unavailable; former resident and pioneer physician of Utica, Nebr.; died at the home of a daughter, June 27, 1934, aged about ninety years.

John W. Youngman, Chester, Nebr.; American Medical College, St. Louis, date unavailable; in practice fifty years, fourteen of which were spent at Chester; died at Masonic Home, Plattsmouth, July 1, 1934, aged almost eighty years. A widow and two daughters survive.

William D. Guttery, Pilger, Nebr.; (retired); Lincoln Medical College, 1901; located at North Bend, Pilger and other Nebraska points; sometime superintendent of the Norfolk State hospital; later on the staff of the state hospitals at San Antonio, Texas, and Bolivar, Tenn.; former member, Nebraska State Medical Association; died July 11, 1934, at the home of a daughter, aged eighty-two years. Dr. J. A. Guttery, Lynch, is a son.

Eleanor S. Dailey, Omaha; Northwestern University Woman's Medical College, 1878; practitioner of Omaha for forty years; died June 26, 1934, aged eighty-two years. A son survives.

Daniel R. Lee, Arcadia, Nebr.; Medical Department, Iowa State University, 1890; the oldest practicing physician in Valley county; in practice at Arcadia since 1890; member, Nebraska State Medical Association; died at a hospital at Ford Collins, Colo., whither he had gone for a visit, June 18, 1934, aged seventy-nine years. A widow, two daughters and a son survive.

NEBRASKA WOMAN'S MEDICAL AUXILIARY HEALTH EDUCATION OUTLINE 1934-1935

Advisory Committee—Dr. H. J. Lehnhoff, Lincoln; Dr. Elizabeth Swab, Omaha; Dr. Andrew Harvey, Fremont.

To the local Presidents: Something should be done about this: Nebraska stands at the foot of the forty-eight states in public health service, less than 2c per capita being provided.

Plan your programs for each month, following this outline as nearly as possible. Any pamphlet mentioned may be obtained from A. M. A., 535 Dearborn Street, Chicago, or through your Health Education Chairman, Mrs. C. W. Pollard, 301 South Happy Hollow Blvd., Omaha, telephone Glendale 1122. Ask for information on any of the suggested programs.

Keep your own county auxiliary scrap book.

October—Social membership meeting. Talks—What the Auxiliary Means: National, State, County. (Handbook for State Auxiliaries, page 6).

Please record your actual findings regarding any topics in the following monthly outlines and send to the health education chairman, after each meeting, for purposes of comparison in following years.

November—Milk. Delegate several members to report on milk pamphlet (Envelope No. 6). Get answers to the suggestions in the envelope from the proper authorities in your community. If information is not obtainable find out why and start a series of campaigns to get adequate milk inspection.

December—Christmas Seal sale assistance. A pageant can depict dress, or hat, or hair, or manners, customs, with period music from beginning of Xmas seals 1907 to now. Bring into the pageant the progress made in T. B. work, including the FERA skin testing. Reproductions of entire collection of Xmas seals made up into poster size. Poster of the year is placed on easel in center of stage. Participants costumed in fashions typical of the year in which seal was sold. As each year's fashion parade is ushered in to appropriate music, the most outstanding event of the year is announced by a good voice and the seal of that year unveiled. Enlist aid of every organization in your locality. Nebraska T. B. Association will give every assistance needed.

Nebraska Tuberculosis Association will furnish "The Little Red" for High School English lessons, "Thanks for Health Day" for the grades. Ask your school principals and teachers for permission to present these for their use, and give them assistance in presenting the T. B. information.

You could require the showing of Xmas seals purchased this year as an admission charge to your pageant—15c, 25c or $1.00 and up worth of seals, depending upon your community. "The Power of the

Christmas Seal", another pamphlet for use in this program. Some large seal posters will be available for use by December 1st, if you will ask for them. Your school are department may wish to make them for you. They should be large enough to be seen by an audience.

January—Prevention of Blindness. Detail some one to give our state laws relating to care of infant's eyes; schools for the blind; pensions for the blind. Have talks from some members of the Prevention of Blindness Committee regarding their work. Find out the situation in your county relative to all other items on blindness mentioned in the envelope No. 7. What is done in your schools to test eyes?

February—Periodic Health Examination as a means of early diagnosis and preventive treatment of disease. (Physical and mental examination). Use Communicable Disease Control study program, Envelope No. 4 and 5. Ask a physician to present information as to early diagnosis and prevention of cancer. and another to talk on prevalence of tuberculosis and its prevention.

March—Purchaseable Public Health. Appoint some auxiliary members to get the following information: Mr. Taxpayer goes shopping in your community. What he pays for: (Please list accurate sums. Obtain information from county clerk or auditor.) Highways, bridges, police, fire, schools, public health.

1. What does the administrative code of your city and/or county provide for modern public health services: Epidemic control, sanitation and public health education?

2. Population of your county?

3. Total expenditure for health and sanitation last year.

4. Per capita expenditure for those purposes.

5. Is this amount adequate to meet the needs of your community?

6. What person or board is responsible for the health of your community?

a. How appointed?
b. Duties.
c. Responsible to whom.
d. Qualifications.
(1) Public health knowledge.
(2) Political.

7. Funds for health work.

a. Obtained how?
b. By whom apportioned?
c. By whom administered?

8. How work is divided.

a. Preventive.

(1) What provision is made for pure water, pure food, sewage and garbage disposal, inspection of slaughter and packing houses, restaurants, industrial diseases, tuberculosis, etc.

(2) What are the laws about vaccination of school children?

(3) Have you medical and dental examination of your school children — pre-school, fifth grade, high school freshmen? (Mental test also?)*. See below.

b. Curative.

(1) Have you clinics where persons with small means can get medical attention? If so, how many persons treated annually?

(2) Have you visiting nurses?

(3) Have you sufficient hospitals?

(4) Are venereal disease cases admitted to hospitals? Is there a venereal disease clinic? Is there follow-up work in clinic and hospitals by persons trained in follow-up?

9. Is there cooperation between the state and county in promoting and protecting public health? If so, to what extent? If not, why not?

10. Does the enforcement of the state venereal disease law discriminate against women? Are women prisoners who are suspected of being infected compelled to be examined before conviction? What about the men?

11. Are the state laws and local ordinances relating to sanitation and the removal of nuisances enforced?

*4. Are quarantine regulations made and enforced?

(To be completed in October number.)

1934 GRADUATES UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE

John Carl Aarni, Parkland Hospital, Dallas, Texas.

Donald Marr Alderson, St. Luke's Hospital, Denver, Colorado.

Bruce Vernon Andersen, University of Nebraska Hospital, Omaha, Nebraska.

Edgar Emmet Anderson, Immanuel Hospital, Omaha, Nebraska.

Walter Lyman Anderson, Harper Hospital, Detroit, Michigan.

Louis Arthur Azorin.

Leo Finimore Baisinger, Pasadena Hospital, Pasadena, California.

Robert Joseph Benford, St. Francis Hospital, Jersey City, New Jersey.

Miriam Crowell Benner, Children's Hospital, San Francisco, California.

Joseph Meredith Boomer, University of Nebraska Hospital, Omaha, Nebraska.

Robert Parks Best, Douglas County Hospital, Omaha, Nebraska.

Marion Frances Booth, New England Hospital for Women and Children, Boston, Massachusetts.

Charles Olin Bruce, Jr., Bellevue Hospital, New York City, New York.

John Milton Butler, University of Nebraska Hospital, Omaha, Nebraska.

Andrew John Chapman, St. Luke's Hospital, Duluth, Minnesota.

Howard Malin Coe, University of Nebraska Hospital, Omaha, Nebraska.

Delmar Lee Coffman, Lee Hospital, Fayette, Missouri.

John Milton Coletti, Grady Hospital, Atlanta, Georgia.

William Louis Coon, Covenant Hospital, Omaha, Nebraska.

John Russel Curry, Nebraska Methodist Hospital, Omaha, Nebraska.

Charles Braxton, Davis, II, Kansas City General Hospital, Kansas City, Missouri.

Jack Lewis Diamond, American Hospital, Chicago, Illinois.

Louis Everett Dickinson, Jennie Edmundson Hospital, Council Bluffs, Iowa.

Harold Chester Dix, Maryland General Hospital, Baltimore, Maryland.

Arthur Axtell Enos, University of Nebraska Hospital, Omaha, Nebraska.

William Cyril Ferguson, Northern Pacific Hospital, St. Paul, Minnesota.

Burhl Babbitt Gilpin, Jr., Immanuel Hospital, Omaha, Nebraska.

Dagmar Jorgensen Glood, Los Angeles County Hospital, Los Angeles, California.

Walter Cheney Graham, University of Nebraska Hospital, Omaha, Nebraska.

Frank Theo Herhahn, Covenant Hospital, Omaha, Nebraska.

Milton Roger Himalstein, University of Nebraska Hospital, Omaha, Nebraska.

Leo Hobson Hoevet, St. Louis City Hospital, St. Louis, Missouri.

Ralph Booth Hogan, Salt Lake City General Hospital, Salt Lake City, Utah.

Edward Augustus Holyoke.

Clifford Dale Howard, Douglas County Hospital, Omaha, Nebraska.

Charles William Ihle, Jr., Mount Vernon Hospital, Mount Vernon, New York.

Robert Shizuo Kinoshita, Emanuel Hospital, Portland, Oregon.

Harold Andrew LaFleur, Clarkson Hospital, Omaha, Nebraska.

Walter Elam Landis, Immanuel Hospital, Omaha, Nebraska.

Kenneth Joy Loder, Fifth Avenue Hospital, New York City, New York.

George E. Loupee, University of Michigan Hospital, Ann Arbor, Michigan.

Daniel Pollard McCleery, Touro Infirmary, New Orleans, Louisiana.

Harold Arthur McConahay, Mercer Hospital, Trenton, New Jersey.

Arch Stinson McMillen, Ancker Hospital, St. Paul, Minnesota.

Harry Wayne McNerney, Covenant Hospital, Omaha, Nebraska.

Clyde Simpson W. Martin, Henry Ford Hospital, Detroit, Michigan.

James Wicher Martin, Douglas County Hospital, Omaha, Nebraska.

Lawrence Milford Mattison, Swedish Hospital, Seattle, Washington.

William Howard Morrison, University of Nebraska Hospital, Omaha, Nebraska.

Erroll Allen Moss, Clarkson Hospital, Omaha, Nebraska.

John Dwight Munsell.

Sylvester Preston Norman, Southern Pacific Hospital, San Francisco, California.

Kenneth Adelbert Ohme, Nebraska Methodist Hospital, Omaha, Nebraska.

Joseph Knight Orr, Northern Pacific Hospital, Tacoma, Washington.

Hyman Reuben Osheroff.

Charles William Pemberton, St. Louis City Hospital, St. Louis, Missouri.

John Paul Person, University of Nebraska Hospital, Omaha, Nebraska.

Millard Theodore Petersen, University of Nebraska Hospital, Omaha, Nebraska.

Kenneth Harvey Prescott, Nebraska Methodist Hospital, Omaha, Nebraska.

John Nicholas Round, Cleveland City Hospital, Cleveland, Ohio.

David Ivan Rutledge, Peter Bent Brigham Hospital, Boston, Massachusetts.

John Fred Sanders, Robert Packer Hospital, Sayre, Pennsylvania.

Roy Franklin Schall, Allegheny General Hospital, Pittsburgh, Pennsylvania.

Frederick Carl Schlumberger, Grace Hospital, Detroit, Michigan.

Elvin Vavrinec Semrad, University of Nebraska Hospital, Omaha, Nebraska.

George Oliver Shaner, Columbia Hospital, Milwaukee, Wisconsin.

Francis Lenocker Simonds, Presbyterian Hospital, Denver, Colorado.

Wayne Benjamin Slaughter, University of Nebraska Hospital, Omaha, Nebraska.

Daniel Denver Smith, Hartford Municipal Hospital, Hartford, Connecticut.

Karl Franklin Stefan, King County Hospital, Seattle, Washington.

Carl Herman Stehl, Lutheran Hospital, St. Louis, Missouri.

Robert Johnston Stein, Albany Hospital, Albany, New York.

Mary Lucille Swayze, Women's and Children's Hospital, Chicago, Illinois.

Charles David Thompson, Southern Pacific General Hospital, San Francisco, California.

Walker Thompson, Boston City Hospital, Boston, Massachusetts.

Robert Grant Thornburgh, Temple University Hospital, Philadelphia, Pennsylvania.

Charles Archibald Tompkins, University of Indiana Hospital, Indianapolis, Indiana.

Maxwell Theodore Wainwright, Northwestern Hospital, Minneapolis, Minnesota.

William Phillip Warner, Jr., Piedmont Hospital, Atlanta, Georgia.

Arnold Irving Webman, Lincoln General Hospital, Lincoln, Nebraska.

Ernest Lloyd Wilbur, Jennie Edmundson Hospital, Council Bluffs, Iowa.

Opal Lester Wood, Missouri Methodist Hospital, St. Joseph, Missouri.

Reginald James Young, Garfield Park Hospital, Chicago, Illinois.

Ernest Carl Magaret, Jennie Edmundson Hospital, Council Bluffs, Iowa.

CREIGHTON UNIVERSITY COLLEGE OF MEDICINE, GRADUATES, 1934, AND INTERNESHIPS

Allegrini, Anthony Eli, Southern Pacific Hospital, San Francisco, Calif.

Almada, Albert Alvin, Sacramento County Hospital, Sacramento, Calif.

Applesis, Abraham, Hospital For Joint Diseases, New York, N. Y.

Beckley, John Henry, St. Vincent's Hospital, New York, N. Y.

Blacker, Maurice, Civilian Conservation Corps, Arkansas.

Boehler, Clement Conrad, Mercy Hospital, Chicago, Ill.

Bourdeau, Emory Joseph, St. Joseph's Hospital, Omaha.

Brennan, Louis Vincent, St. Catherine's Hospital, Omaha.

Buckley, Daniel Noel, St. Mary's Hospital, San Francisco, Calif.

Campion, George Stuart, California Hospital, Los Angeles, Calif.

Case, Edward, Providence Hospital, Seattle, Wash.

Cohen, Maxwell Richard, Beth-El Hospital, Brooklyn, N. Y.

Collins, Loren Edwin, St. Catherine's Hospital, Omaha.

Cooper, Raymond Edward, St. Catherine's Hospital, Omaha.

Dashiell, Grayson Fairfax, St. Francis Hospital, Evanston, Ill.

Demman, John Benjamin, Salt Lake City General Hospital, Salt Lake City, Utah.

Dolinsky, Louis L., Flowers Hospital, Brooklyn, New York.

Dorwart, Clinton Bill, St. Alexis Hospital, Cleveland, Ohio.

Doyle, J. Frederick, Springfield City Hospital, Springfield, Ohio.

Driscoll, John Albert, St. Luke's Hospital, San Francisco, Calif.

Dworak, Henry Louis, St. Joseph's Hospital, Omaha.

Eagan, John Charles, St. Joseph's Hospital, Omaha.

Evans, Robert Edward, St. Vincent's Hospital, Portland, Oregon.

Everman, Cornwall Claude, St. Mary's Hospital, Kansas City, Mo.

Flynn, John Roderick, St. Joseph's Hospital, Tacoma, Wash.

Fochtman, Helen Elizabeth, Los Angeles County General Hospital, Los Angeles, Calif.

Fochtman, John Thomas, St. Vincent's Hospital, Portland, Oregon.

Fujikawa, Yoshihko Fred, Los Angeles County Gen-ral Hospital, Los Angeles, California.

Glenn, La Verne P., Sacramento County Hospital, Sacramento, Calif.

Green, Hubert Francis, St. Joseph's Hospital, Omaha.

James, Louis Daniel. St. Elizabeth's Hospital, Lincoln, Nebr.

Kanagawa, Harold Hajime, Bryan Memorial Hospital, Lincoln, Nebr.

Kansora, Clement Paul, St. Joseph's Hospital, San Francisco, Calif.

Kelley, John Whitney, St. Joseph's Hospital, Omaha.

Keilhorn, Dora Elizabeth, Mercy Hospital, Council Bluffs, Iowa.

Klein, Milton, Coney Island Hospital. Dept. of Hospital, New York, N. Y.

Kohnop, Benjamin, Beth David Hospital, New York, N. Y.

Koziol, Edward Stephen, St. Joseph's Hospital, Sioux City, Iowa.

Lev, Morris, Michael Reese Hospital, Chicago, Ill.

Lipp, Frank Edward, Sydenham Hospital, New York, N. Y.

Lusby, Luther Cecil, St. Anthony's Hospital, Denver, Colorado.

Lutsky, Solomon, Trinity Hospital, Brooklyn, N. Y.

McDonald, Daniel Claude, St. Vincent's Hospital, Portland, Oregon.

Mackenbrock, Fred C., St. Mary's Hospital, Detroit. Mich.

Manganaro, Joseph Carl, St. Joseph's Hospital, Omaha.

Mangiameli, Carl L., St. Elizabeth's Hospital, Lincoln, Nebr.

Moskowitz, Simon Lerner, Douglas County Hospital, Omaha.

Muggly, Joseph A., St. Catherine's Hospital, Omaha.

Murphy, John James, Long Island Hospital, Boston, Mass.

Nagle, John M., Southern Pacific Hospital, San Francisco, Calif.

Oliva, George Verdelli, St. Joseph's Hospital, Tacoma, Wash.

Paoli. Theodore Henry. St. Luke's Hospital, San Francisco, Calif.

Parlangeli, Louis Joseph, Misericordia Hospital, New York, N. Y.

Pease, George Joseph. Hospital for Joint Diseases, New York, N. Y.

Porter, Elmer Ray. Jr., St. Joseph's Hospital, Omaha.

Powers, Welch, Columbus Hospital, Seattle, Wash.

Redlng, Arthur Paul, St. Joseph's Hospital, Sioux City, Ia.

Reiter, Samuel Eli. Harlem Hospital. New York, N. Y.

Rosenberg, David Sam, Morningside Hospital, Tulsa. Okla.

Rosenthal, Moe Bernard, Lebanon Hospital. New York, N. Y.

Sedofsky, Nathan, Beth Moses Hospital, Brooklyn, N. Y.

Shreck. Horace Wellman, Douglas County Hospital, Omaha.

Smith, Arthur James, St. Joseph's Hospital, Omaha.

Smrha, James Albert, St. Joseph's Hospital, Omaha.

Suffin, Arthur, Beth Moses Hospital, Brooklyn, N. Y.

Williams, Harry De Nell, St. Luke's Hospital, San Francisco, Calif.

THE SOCIETIES

A joint meeting of the **Brown County (Kansas) and Richardson County (Nebraska) Medical Societies** was held June 22nd at the Country club, Falls City, and was attended by thirty-nine doctors and members of the auxiliary.

An interesting and informative discussion was presented by Dr. W. G. Emery, Hiawatha, on his "Observations of County Health Work."

Dr. H. J. Deaver, Sabetha, spoke on "Complications of Pneumonia."

The meeting was preceded by an afternoon golf tournament and dinner at the Country club.

Members of the **Five County Medical Association** met in Homer last July 2, as the guests of Dr. A. A. Larsen. A 6 o'clock dinner was served them by the Methodist Ladies' Aid at the schoolhouse and was followed by a meeting and program at the Homer hospital.

After an inspection of the hospital the following program was presented: Dr. A. E. Cook, Randolph, topic "Influenza," followed by general discussion; Dr. Walter Benthack, Wayne, topic, "Abdominal Diagnosis," followed by general discussion; and Drs. Neill of Sioux City, Gramlich of Walthill, Culp of Winnebago and Larson of Homer held a clinic showing cases and x-rays.

About thirty attended.

The **Madison Six County Medical Society** met at Norfolk, July 17. About seventy doctors and their wives enjoyed dinner and after being entertained by Mr. "Tim" Stark, who sang several numbers, listened to Dr. David Berkman, of Rochester, talk about medical economics in a way which all enjoyed immensely. Dr. Lucien Stark read a paper on and presented specimens and slides showing his method of kidney injection, with a classification of kidney disease to be used at the bedside. From the discussion by many doctors and Lucien's delivery of his idea, complicated kidney disease and diagnosis is simplified by his work.

HUMAN INTEREST TALES

Dr. A. J. O'Toole has located at Greeley.

Dr. Sanford Gifford, Chicago, visited in Omaha recently.

Dr. W. I. Devers, formerly of Upland, has located at Pierce.

Dr. A. G. Burnham has moved from Oconto to Bridgeport.

Dr. and Mrs. Clayton Andrews, Lincoln, vacationed at Estes Park.

Dr. Clyde Moore, Omaha. was recently operated on for appendicitis.

Dr. and Mrs. Eric Pheiffer, Wilbur. spent ten days at Lake Okoboji.

Dr. J. N. Plumb, York, submitted to an operation for hernia lately.

Dr. H. A. Copsey and family visited the Yellowstone park during July.

Dr. W. H. Pennoyer has located at Bellwood to practice medicine.

Dr. and Mrs. A. W. Anderson, Lexington, visited in Detroit last month.

Dr. E. Lodor has opened an office at Tilden for the practice of medicine.

Dr. and Mrs. Jesse Hartman. Crete, visited in California during the summer.

Dr. Kenneth Lodor has been added to the staff of the Norfolk State hospital.

Dr. C. W. Egermeyer, formerly of Shubert, has located at Elliott City, Iowa.

Dr. F. E. Way, Wahoo, spent some time this summer on the Atlantic coast.

Dr. and Mrs. Clarence Rubendall, Omaha, spent some time at Lake Okoboji.

Dr. and Mrs. L. M. Stearns, Kearney, visited at Coldwater, Mich., in August.

Dr. and Mrs. S. A. Campbell and family spent ten days at Cass lake, Minnesota.

Dr. D. D. Stonecypher, Nebraska City, attended clinics in Denver during July.

Dr. and Mrs. E. H. Dwyer, Gordon, visited the Yellowstone park during August.

Dr. and Mrs. M. E. Lathrop, Wahoo, spent three weeks in the Colorado Rockies.

Dr. and Mrs. C. L. Fahnestock, Lincoln, spent some time in the Black Hills in July.

The marriage of Dr. A. C. Pruner and Mrs. Ross Shotwell, Omaha, is announced.

Dr. C. A. Lutgen and son, Auburn, had a two weeks vacation in the Colorado Rockies.

Dr. and Mrs. F. J. Condon, St. Paul, visited points in Iowa and Canada, during July.

Dr. E. J. Angle, Lincoln, spent his vacation with his family at the Minnesota lakes.

The Dr. Andrew Harvey family, Fremont, spent their vacation in Estes Park, Colo.

Dr. J. F. Stibal has located at Plattsmouth. He was located in Michigan five years.

The Doctor Bald family, Platte Center, spent their summer vacation at Moran, Wyoming.

Dr. A. W. Abts, Humphrey, and Miss Frances Reinhart, Humphrey, were married June 15.

Dr. Harvey Casebeer has located at Garner, Colo., camp physician in a conservation camp.

Dr. and Mrs. Howard Royer, Scotia, visited in Seattle and other points during the summer.

Dr. N. H. Lewis, Benkelman, was called to Detroit, Mich., by the illness and death of a sister.

Dr. and Mrs. J. B. McPherson, Hastings, spent a month on the lakes of northern Minnesota.

Dr. T. Y. Dorwart, former practitioner at Lexington, has gone to Alhambra, Calif., to locate.

Dr. and Mrs. W. S. Wiggins, Exeter, spent some time in Michigan and upper Canada in July.

Dr. and Mrs. W. J. Hemphill, North Loup, made a trip to Yellowstone park during the hot spell.

Dr. and Mrs. F. A. Mountford, Davenport, did some fishing in Dakota and Wyoming streams, in July.

Dr. Frank Barns, Albion, was elected Department Surgeon of the Nebraska Veterans of Foreign Wars.

Dr. C. L. Anderson, Stromsburg, spent a month in postgraduate work at Cook County hospital, Chicago.

Dr. and Mrs. N. H. Rasmussen, Scottsbluff, spent some time in August, fishing in the Minnesota lakes.

Dr. William Robertson for some time located at Amherst, has located at Holdrege, his former field of practice.

Dr. and Mrs. W. J. Douglas, Atkinson, spent the latter part of July visiting their daughter at Evanston, Ill.

Dr. W. J. Gentry, Omaha, spent several weeks in Chicago doing postgraduate work and seeing the exposition.

Dr. G. W. Pugsley, Bayard, was forced into a ditch in passing a truck and suffered the wreck of his car, recently.

Dr. H. D. Miller of Chicago has located at Laurel in succession to Dr. J. D. Lutton, who has moved to Sioux City.

Dr. Charles L. Nutzman, Harvard, has been appointed to a residency in Peter Bent Brigham hospital, Boston.

Dr. Lyman Heine, son of Dr. W. H. Heine, Fremont, has gone to Boston for three years of special study under Mosher.

Dr. G. O. Remy, veteran Ainsworth physician, spent the month of July visiting his son, Dr. Chas. O. Remy, at Minneapolis.

Dr. H. B. Lemere, Hollywood, Calif., erstwhile Omaha, eye, ear, nose and throat surgeon, visited in Omaha during July.

Dr. and Mrs. A. J. Griot, Chadron, spent six weeks in Los Angeles during the early summer, the doctor doing postgraduate work.

Dr. Olga Statsny, Omaha, was elected treasurer o the Medical Women's National Association at th Cleveland meeting in June.

Dr. and Mrs. W. F. Novak, Howells, made a 5,00 mile trip including the Yellowstone, points in Washington, Oregon and California.

Dr. George Salter, Norfolk, spent six weeks at th New York Medical Center and Roosevelt hospital i special study of surgery and obstetrics.

Dr. H. R. Palmateer and Dr. J. J. Bruce, Madiso physicians practicing together, alternately fished th waters of Aikin, Minn., in June and July.

Dr. and Mrs. F. A. Long, Madison, visited thei daughter at Salem, Oregon, and also visited othe Pacific Northwest points during July and earl August.

Dr. Leslie L. Huntley has gone to a mission fiel in Sierra Leone, Africa, for service. He was marrie July 7 in Chicago to Miss Mary Bergdall, who will b a missionary teacher.

Dr. Walter Judd, a Rising City man, who has bee in the mission field in China for some years and wa home on furlough the last two years, has returne to his work in China.

Dr. Delbert K. Judd, recently from the Massachusetts Eye and Ear infirmary has become associate with Drs. Cassidy and Judd, Omaha, in the practic of ophthalmology and otology.

Dr. John R. Nilsson, chief surgeon of the Unio Pacific, was elected chairman of the medical an surgeon section of the American Railway associatio for 1935 at the meeting of that organization in Washington, D. C., June 26.

Drs. Gifford, Callfas, Potts and Stokes, Omaha, announce the association with them of Dr. Edward L Rigley, in the department of otolaryngology an bronchoscopy. Dr. Rigley was instructor of otolaryngology and bronchoscopy in the University of Michigan College of Medicine.

BOOKS RECEIVED

THAT HEART OF YOURS, by S. Calvin Smith M. D., Sc. D., author of "Heart Affections: Thei Recognition and Treatment," "Heart Records: Thei Interpretation and Preparation," "How is You Heart?" (New York and London), etc. 212 pages octavo, three illustrations in color and three in blac and white. Published by J. B. Lippincott Co., Philadelphia. Cloth. Price $2.00.

THE POWER TO LOVE, a Psychic and Physiologi Study of Regeneration, by Edwin W. Hirsch, B. S. M. D., Associate in Urology, College of Medicine, University of Illinois. 363 pages, octavo, cloth. Published by Alfred A. Knopf, New York. Price $4.00.

SPINAL ANESTHESIA, Technic and Clinical Application by George Rudolph Vehrs, M. D., Salem, Oregon. 269 pages, octavo, cloth, illustrated. Publishe by C. V. Mosby Co., St. Louis. Price $5.50.

TUBERCULOSIS IN THE CHILD AND TH ADULT, a Discussion of Pathologic Anatomy, Pathologic Physiology, Immunology, Diagnosis and Treat ment, by Francis Marion Pottenger, A. M., M. D. LL. D., F. A. C. P., Clinical Professor of Medicin (Department of Chest), University of Southern Cali fornia, the School of Medicine; Medical Director, th Pottenger Sanatorium and Clinic for Diseases of th Chest, Monrovia, California. 16 mo., 611 pages, clot illustrated. Published by C. V. Mosby Co., St. Louis Price $8.50.

SURGERY OF A GENERAL PRACTICE, by Arthu E. Hertzler, M. D., Chief Surgeon, Halstead Hospital Professor of Surgery, University of Kansas, and Vic tor E. Chesky, M. D., Chief Resident Surgeon, Hal stead Hospital. 602 pages, 12 mo., cloth. Publishe by the C. V. Mosby Co., St. Louis. Price $10.00.

THE NEBRASKA STATE MEDICAL JOURNAL
ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION
Vol. 19 Norfolk, Nebraska, October, 1934 No. 10

CONTENTS

Page
Carcinoma of the Colon, Walter A. Fansler, M. D., F. A. C. S., and James K. Anderson, M. D. 361
Management of Hemorrhage in Duodenal Ulcer, M. C. Howard, M. D., and M. W. Barry, M. D. 367
Fractures of the Forearm, B. R. McGrath, M. D., F. A. C. S. 372
The Diseased Uterine Cervix, With a Preliminary Report on Schiller's Lugol Test, R. J. Stearns, M. D 375
Report of 46 Cases of Trichiniasis, Albert W. Anderson, M. D. 379
Electro-Coagulation on Tonsils, L. C. Knight, M. D. 382
The Value of Sequestration Anemia in Surgery, C. H. Newell, M. D. 384
The Choice of Operation in Biliary Tract Disease, Harry H. Everett, M. D., and Roy H. Whitham, M. D. 387
Page
Clinical Pathological Case Reports—IV, Floyd L. Rogers, M. D., and J. Marshall Neely, M. D. 389
EDITORIAL—
State Emergency Relief for Medical Service to Indigent 390
Medical Education in the United States 391
Present Status of the Serum Treatment of Poliomyelitis 391
A Plan to Evaluate Independently Serologic Procedure for the Diagnosis of Syphilis in the United States 392
Some Early Medical History of a Prairie State 393
Editorial Paragraphs 396
Obituary 397
Nebraska Woman's Medical Auxiliary Health Education Outline 1934-1935 397
The Societies 398
Human Interest Tales 399
Books Received 400

CARCINOMA OF THE COLON*

WALTER A. FANSLER, M. D., F. A. C. S.,
Assistant Professor of Surgery,
University of Minnesota,
and
JAMES K. ANDERSON, M. D.,
Instructor in Surgery, University of Minnesota,
Minneapolis, Minn.

It is my purpose in this paper to emphasize the diagnosis of colonic malignancy in its operable stages, and to discuss preoperative preparation and postoperative care. A combination of late diagnosis, the neglect of proper preparation and after care, is more often the cause of death than improperly executed operative maneuvers. Operative procedures may be found in any text book and their execution accomplished by any capable surgeon.

The colon, next to the stomach and rectum, is the most common site of malignant disease in the intestinal tract, and at the present time only fifty per cent of cases seen are suitable for radical operation. This lateness of the diagnosis may be due to the fact that the patient does not seek advice until his symptoms are really distressing, but only too often it is the fault of some physician who did not insist upon a thorough examination when the patient presented himself with symptoms which seemed more or less trivial. To a certain extent this state of affairs exists because in most routine discussions of carcinoma of the colon only the advanced symptoms of this condition are thought to be of sufficient importance to emphasize. As a matter of fact, a discussion of these late symptoms is quite pointless, for at this stage of the disease the diagnosis is obvious and operative procedures are futile. The symptoms to emphasize are not those which indicate that a carcinoma is surely present, but those which indicate that a carcinoma may possibly be present. These early symptoms naturally are not pathognomic of cancer or of any other particular abnormality. More often than not, they are due to conditions other than malignancy, and we must expect the majority of examinations to fail to reveal the presence of a tumor. Nevertheless any patient having persistent abdominal symptoms, even though they be vague and slight in character, which do not clear up under usual medication and dietary regime, is entitled to a thorough examination. These symptoms may be described as a feeling of vague abdominal pressure or uneasiness, slight transient twinges of discomfort, an unusual amount of gas, an occasional loose stool, or an area of slight tenderness. Almost any person may have any or all of these symptoms, but if they persist or tend to recur at intervals, then a careful examination should be made.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, Nebraska, May 22-24, 1934.

It is only by the investigation of cases of this type that we can hope to discover malignancy in its earliest stages. Sometimes we hesitate to subject a patient to a thorough, painstaking and perhaps rather expensive examination fearing that in the case of negative findings, the patient may be dissatisfied and that we be viewed as an alarmist. If, however, the possibilities of the situation are carefully explained to the patient, I think this attitude is most unlikely. The fear of cancer is almost universal, and from my own experience, patients not only willingly agree to the necessary diagnostic procedures, but often insist that they be carried out in detail and repeated to an extent which I feel is unnecessary.

The most valuable single diagnostic agent in this stage of the disease is the x-ray. These x-ray examinations should be done by someone especially skilled in this work and with the best equipment. An improperly done x-ray does more harm than good, for we may be lulled into a sense of security by accepting a negative report based on a poor study. A barium enema is the only reliable method of examination. After careful fluoroscopic examination, plates should be made while the colon is distended with barium. Another series should be made after the barium has been expelled, and finally a so-called aerogram after the colon has been distended by the injection of air. All fecal material must be removed. This is best done by a saline cathartic, followed by enemas of tap water. Any small particles of stool remaining in the bowel may become coated with barium and lead to confusion when the plates are examined. In all cases where it is thought a small lesion has been discovered, the x-ray examination should be repeated to determine if the supposed lesion is a constant finding. No doubt small flat lesions may occasionally be overlooked by the most expert, but even they will often show on the aerogram. I have repeatedly had single lesions of a protuberant or polypoid type, demonstrated by x-ray, when the lesion was not more than 1.5 cm. in diameter. In rare instances macroscopic blood may be noted in these early cases. However, the stools should be examined in every case microscopically and chemically for small amounts of blood are frequently present. The finding of blood even in these small amounts is important, unless its presence can be accounted for by some definite abnormality which can be seen with the proctoscope.

Assuming the x-ray findings to be negative for malignancy, if no satisfactory explanations for the symptoms can be offered, and the symptoms persist, an exploratory operation should be considered. This is especially true if chemical or microscopic examinations reveal the presence of unexplained blood. The abdomen is frequently explored to examine a suspicious appendix or gallbladder, yet surgeons seem to hesitate to open an abdomen to examine the colon for some suspected lesion, which if present, presents a far greater hazard to the patient than either of the above conditions. Assuming the patient has passed through the symptoms just enumerated without seeking medical advice, he may still present himself in a relatively early stage of the disease while the growth is still small, the percentage of operability high, and the chances of cure good. At this point of development the most common findings is the presence of blood in or with the stool. It is true that in certain small sclerosing types of growth of the left half of the colon, the patient may never pass blood, and obstruction be the first intimation that any abnormality is present. This is an exception, for the majority of tumors are friable, have imperfectly developed blood vessels, ulcerate early, and are traumatized easily. Under these circumstances bleeding ordinarily begins while the tumor is still small. The bleeding has quite characteristic differences, depending upon the portion of the colon harboring the growth. In the cecum and right half of the colon the bowel content is fluid and the growths are usually of a cauliflower fungating type. In this case the blood is invariably mixed with the stool and there is frequently considerable mucus.

Diarrhoea is likely to be present at least at intervals due to the growth stimulating peristalsis, and forcing the liquid content of the right half of the bowel into the descending portion. Slight nausea and colicky pain may be present.

In the left half of the colon the stool is more formed and the growth is more likely to be of a medullary or constricting type. For this reason bleeding is at more irregular intervals and is due to traumatization of the growth by a hard stool. The amount of blood is greater than from a tumor of the same size involving the right half of the colon, and is not intimately mixed with the stool but appears with or around it. For this reason the blood is more apparent. Diarrhoea is not common. In the final analysis the important thing is not the kind of blood present or the symptoms appearing with it, but the fact that blood is present at all. Blood of any kind means a definite abnormality of some kind and one should not be content until a satisfactory explanation for its presence is found. To summarize then, bleeding, change in bowel function with perhaps some colicky pain and a slight degree of localized tenderness are the symptoms of this stage of the disease. There is no excuse for missing a growth producing such symptoms for proper x-ray studies will invariably reveal it. Of the more advanced symptoms such as obstruction, anemia, loss of weight and strength, palpable tumor, it is not necessary to speak. When they are present the diagnosis is obvious and in the majority of cases, radical operation is impossible. There are a few conditions as diverticulitis and certain inflammatory conditions which may confuse one at this stage of development, but these cases are rare, and cancer cases are common.

Naturally we prefer to see colonic cancer in its early stages and in healthy robust individuals. Increasingly careful investigation will bring to operation a larger group of these early cases. The fact remains, however, that cancer is usually a disease of later life where robust health is the exception rather than the rule. This coupled with the fact that regardless of any educational campaign, we are sure to see many well advanced cases of carcinoma, compels us to be most careful in our selection, preparation and care of these patients.

Under preoperative preparation should be included all procedures, medical or surgical, which are preliminary to the actual removal of the tumor. Of conditions existing in the colon, itself, obstruction is the most important single factor influencing operative mortality. If obstruction is present, it should always be relieved preliminary to the removal of the growth. In cases of high grade obstruction, this is best done by cecostomy or a proximal colostomy. It is more difficult to empty an impacted colon through a cecostomy, but in a high grade obstruction cecostomy is probably the safest operative method. Where a colon is obstructed the walls are edematous and injected and very permeable to bacteria. Even moderate manipulation during exploration may produce peritonitis. It has been customary in the past to inlay a catheter into the cecum and open it at once, but after having had experience with the use of nasal suction in these cases, we usually do not open the bowel until later. The cecum is usually stitched to the abdominal wall, or a mushroom catheter inlayed into the cecal wall with a purse string suture and the bowel opened forty-eight hours later after adhesions have walled off the peritoneal cavity. Nasal suction will usually reduce the amount of distention, take care of the material regurgitation from the small intestines, and make the patient comfortable during the waiting period. Subcutaneous or intravenous injections of 5 per cent glucose in normal saline will supply needed fluid, provide some nourishment, and prevent acidosis.

In patients with low grade obstruction medical measures may be sufficient to overcome it. The use of saline enemas and mild repeated cathartics, will often accomplish this purpose, though it may be necessary to continue this treatment for a week or ten days to secure the desired results. If the tumor is low enough to be seen with a proctoscope, a catheter can sometimes be passed by the growth and the bowel irrigated. In case the tumor has perforated the bowel wall and an abscess formed, it should be drained by the simplest method possible. Since approximately 50 per cent of the tumors occur between the ages of fifty-five and seventy, these patients are quite likely to have some cardiovascular, renal or other physical impairment. Their healing and recuperative powers are also less than in the case of younger more active persons. For these reasons a very careful physical survey is made of all these patients. If the blood pressure is abnormal or there is evidence of arteriosclerosis, or the cardiac findings are questionable, an electro-cardiogram is made. Cases of hypertension are considered upon their individual merit, particular attention being paid to abnormal diastolic or pulse pressure. If anemia is marked, transfusions consisting of 500 cc. citrated blood are given until the hemoglobin has reached the minimum of 75 per cent. In cases where the patient has lost weight, a high caloric, low residue diet is given to aid in restoring weight loss. If the chemical examination of the blood shows unusual concentration of creatine and urea nitrogen, or there is albumin or casts in the urine, a careful investigation is made for kidney impairment. If these symptoms persist after forcing the fluids, the application of hot packs and diuretic drugs, a kidney functional test should be made. The presence of pus in the urine may suggest a cystitis, pyelitis or prostatic involvement. In every case this is carefully checked and the prostate gland investigated. Any abnormality is cleared up as well as possible before operation is done. An ascending pyelitis is sometimes a fatal postoperative complication so every effort is made to prevent its occurrence. Whether obstruction is present or not it is extremely important that the bowel be emptied of all its fecal content before operation. Where no obstruction is present this is done by giving an ounce of epsom salts in 8 ounces of water three days before operation. The colon is then irrigated twice daily with normal saline enemas, the last being given twelve hours before the operation. The diet during this period is high caloric non-residue type, the chief ingredients being candy and sugar mixed with fruit juices. Occasionally we give 1000 cc. of 5 per cent glucose intravenously each day for three days preoperatively but where the patient tolerates this diet well, it is not necessary. Intraperitoneal vaccination has been proven to be of undoubted value. The method of Bargen by which 300,000,000 to 1,000,000,000 streptococci and colon bacilli in 10 cc. of normal saline are injected intraperitoneally seventy-two hours before operation, is an acceptable method. Any other special physical impairment which may be present must be evaluated and cared for in the best manner possible before surgery is done. This in general represents a satisfactory routine preoperative preparation, but each patient must be considered as an individual.

The immediate postoperative care has to do with shock and fluid loss. If there is evidence of shock during the operation the patient is given 500 to 1000 cc. of 6 per cent acacia solution or 500 to 1000 cc. of 5 per cent glucose in normal saline intravenously while he is still on the operating table. The acacia will produce a more sustained rise in blood pressure but the glucose will give direct stimulation to the heart muscle. In some cases 1 cc. of 1 to 1000 solution of ephedrin may be given intramuscularly and the area well massaged. Where the blood pressure still remains low the patient upon being returned to bed is given 1000 cc. of normal saline by hypodermoclysis to which has been added 1 cc. of adrenalin 1 to 1000. In severe cases of shock the patient is given a blood transfusion at once, but whether shock is present or not, we usually give a transfusion of 500 cc. of blood by the citrate method, six to eight hours after the operation is completed. With the increase of the use of spinal anesthesia and the increased knowledge of the treatment and prevention of shock, cases of severe shock or death from this cause, have been almost entirely eliminated. Pain and peristalsis are controlled with ample doses of morphine, pantapon or dilaudid. After the immediate postoperative treatment is completed, one of the most important factors in later postoperative care is the maintenance of a proper fluid balance. Since nothing is permitted by mouth until the passage of gas by bowel, or in the case of obstructive type of operation until the bowel is opened, we must rely upon intravenous injections and hypodermoclysis to supply fluids. Normally we ingest about 1000 cc. of fluid per day in our foods, exclusive of liquids we may drink, and excrete about 2000 cc. through the skin and lungs. Excessive perspiration may greatly increase this amount, or lack of bodily activity may reduce it. In addition to the urinary output, we also excrete considerable amounts of fluid through the stool, especially in the advent of diarrhea, vomiting, hemorrhage, or excessive wound secretions. These amounts must all be estimated in endeavoring to maintain a proper fluid balance. While the physical and chemical actions of water metabolism is a complicated subject, there are a few practical indications which usually suffice to govern our course in these cases. One is the condition of the tongue which should be moist, the second is the urinary output. In the urine we usually excrete 35 grms. of solids in twenty-four hours. To do this requires at least 600 cc. of urine and an output less than this should be viewed with suspicion. It has become quite customary to supply large amounts of fluids by the intravenous method. This is a very valuable method and where it is necessary to replace fluids quickly, as following hemorrhage, it is the best method. However, using it as a routine measure has been overdone and the method is not without danger. Aside from systemic reactions such as chills and hyperpyexia, it is quite possible to produce circulatory embarrassment and even death in certain cardiac cases by overtaxing an already damaged heart. The exchange of fluids in the tissue cells is a delicate process and excessive fluid thrown into the circulation may not be cared for as well as that absorbed more slowly by hypodermoclysis. For instance. the kidney will tolerate approximately .8 grms. of glucose per kilo of body weight per hour. This means that the average individual cannot care for more than 100 grms. in one hour. For that reason intravenous administration of glucose solution must be given slowly or a portion of the glucose will overflow in the urine and its benefit is lost to the patient. Two hours is not too long for administering 1000 cc. of solution. We feel that hypodermoclysis offers a safer and more physiological method for the administration of fluids where large amounts are given over a considerable period of time. By using four 30 gauge needles with five per cent glucose in normal saline from 3 to 5 per cent of the body weight (2500-4000 cc.) can be delivered in twenty-four hours of continued hypodermoclysis. These figures represent the average amount of fluid needed to maintain proper fluid balance in the ordinary case. The only objection to continued hypodermoclysis is on the part of the patient. He occasionally protests vigorously. We feel that practically every patient needs at least 2000 cc. of fluid daily, so we usually give 1000 cc. of 5 per cent glucose in normal saline each day by the intravenous route and the additional fluid by hypodermoclysis. In case the solution given by hypodermoclysis is not absorbed readily, we discontinue it temporarily feeling that usually means the patient does not need it. This compromise ordinarily satisfies the patient, and we feel he is taking no chances in receiving 1000 cc. intravenously. There has been some experimental work to show that the ingestion of considerable amounts of glucose tends to produce ileus. As yet we have not been convinced that this is of clinical importance in the majority of cases but where there is a tendency to distention, 20 units of insulin may be given with each 1000 cc. of 5 per cent glucose. The addition of the insulin encourages, rather than retards peristalsis. While the passage of gas is the usual accepted sign for beginning the ingestion of fluids by mouth, I am sure that many times it would be better to delay this a day or two longer. Only too often have I had patients whose abdomens were perfectly flat, and who were having no gastro-intestinal disturbances, begin to vomit and have distention upon taking fluids by mouth, even though the gas had been passed from the bowel. It is probably wise to begin the ingestion of fluids by mouth twenty-four hours later than we would be inclined to start and then do so very cautiously. In other words not earlier than seventy-two hours postoperatively, and better, ninety-six hours. At the first onset of nausea and distention nasal suction should be started. This will frequently give immediate relief and within twenty-four hours the tube can be removed, though we have at times left the apparatus in place for ten or more days. Its use keeps the patient comfortable, and gas and solid materials regurgitated into the stomach from the small intestines, are promptly carried off. We usually allow the tube to be open about half of the time, though in some cases it may be necessary to leave it on almost continuously. In this event we must keep in mind this fact that serious chloride depletion may occur, especially if the patient is permitted to drink water freely, and it is then quickly regurgitated through the nasal suction. Where the distention is quite severe and no gas is passed the intravenous injection of 100 cc. of 10 per cent sodium chloride will frequently produce the desired peristalsis. In fact it can almost be relied upon to do so unless organic obstruction is present.

The most common complications causing death are obstruction, peritonitis, urinary complications, sepsis. pneumonia, thrombosis, pulmonary embolus, cardiac failure. Cases of obstruction due to ileus will sometimes clear up spontaneously or the use of petuitrin or salt solution, as has just been mentioned, will bring results. Organic obstruction may occur from adhesions, kinking or volvulus. Once it is determined that an organic obstruction is present, an ileostomy without exception, must be done at once. To be effective it must be done within twenty-four to thirty-six hours. A mild degree of peritonitis occurs perhaps more often than we suspect. Many patients who have had no nausea and whose abdomens have been flat will about the third day begin to have nausea and vomiting with some abdominal distention and a mild degree of ileus. With the use of nasal suction these symptoms will usually clear up in four or five days, the distention disappears, the patient passes gas freely and retains his fluids and foods. These symptoms I believe are often due to a peritonitis of mild grade. In severe or even fatal cases of peritonitis in these postoperative cases the symptoms often do not conform to the classical description. I have seen many cases come to autopsy where the abdomen remained soft and only reasonably distended. Temperature and leucocytosis are present but these symptoms occur postoperatively in all of these cases. These things being true there can be no doubt but that these are cases of peritonitis where recovery takes place without a definite diagnosis having been made. The preoperative use of intraperitoneal vaccine is the best insurance against a severe peritonitis. The most common complication directly due to operative technique is leakage about the suture line in cases of anatamosis. This may result in a generalized peritonitis which is usually fatal, or there may be a localized abscess which it may be possible to drain. Another complication which, though fairly rare, is serious and sometimes fatal is parotitis. Careful attention to mouth hygiene, keeping the mouth clean and moist, the fluid intake up and permitting the patient to suck hard acidulated candy or lemon, is the best prophylaxis. If it occurs the use of radium or deep x-ray therapy is the best treatment.

Urinary complications are not uncommon, especially in tumors low in the bowel where retention of urine not infrequently occurs. The forcing of fluids to keep up urinary ouput, irrigating the bladder where catheterization is necessary, and the ingestion of a tablet containing ammonium chloride gr. xv and urotropin gr. viiss four times daily is a help. The possibility of an ascending pyelitis should always be kept in mind. Absorption from a large infected operative wound may lead to serious consequences, especially in old debilitated individuals. Every effort should be made to clean up any large wounds promptly by irrigating them twice daily. Warm boric acid solution or mercury oxycyanide 1-5000 is satisfactory. Blood stream infections may occasionally occur, and if so, the usual supportive treatment should be used. They should always be considered in cases of unexplained postoperative temperature. Pneumonia is. of course, a serious and often fatal complication. Hyperventilation is practiced postoperatively in all cases, and we believe it has some value in preventing postoperative pneumonias. Thrombosis of the mesenteric vessels sometimes occurs as well as thrombosis of the iliac vessels. No set form of treatment can be promulgated for these conditions but must depend upon the experience of the surgeon. Pulmonary embolus and sudden cardiac failure cannot usually be foretold, or forestalled. We can, however, be careful not to suddenly overburden the heart with too much intravenous medication, and in known cases of cardiac weakness, digitalis or like drugs may be given early.

The mortality rate in carcinoma of the colon varies with the percentage of cases the surgeon accepts for operation. Assuming fifty per cent of the cases seen are accepted for radical operation, a mortality rate of from ten to twelve per cent cannot be considered excessive. If the rate is more than this the reasons should be carefully sought out. Technique probably cannot be improved a great deal, and any considerable decrease in mortality rate will have to come through early diagnosis, and more careful preoperative and postoperative care. Results in carcinoma of the colon are very good considering the percentage of cures of cancer elsewhere. All the statistics show there is some variation in percentage of cures in the different parts of the colon. The average percentage of cures, considering five years as a basis, are fifty-one per cent for the cecum, forty-eight for the colon proper, and forty per cent for the sigmoid—a general average of approximately forty-six per cent.

In conclusion these four thoughts might be well to keep in mind.

First: Many cases of cancer of the colon can and should be diagnosed earlier.

Second: An increase in the percentage of operable cases, a decrease in the operative mortality, and an increase in the percentage of cures can be gained only by earlier diagnosis.

Third: Earlier diagnosis can be made only by giving careful attention to what may be termed trivial abdominal symptoms and not waiting for the classically described symptoms, which really are the symptoms of advanced cancer.

Fourth: The chief causes of postoperative deaths are not improperly done operations, but an improper selection of operation and a lack of attention to careful preoperative preparation and postoperative care.

BIBLIOGRAPHY

Cancer of the Colon, Frank H. Lahey and Sara M. Jordan, The New England Journal of Medicine, June 2, 1932.

Surgery of the Large Intestine, W. G. Mayo, Annals of Surgery, October, 1931.

Carcinoma of the Colon, David Cheever, Annals of Surgery, October, 1931.

Carcinoma of the Colon and Rectum, D. F. Jones, The Canadian Medical Association Journal, May, 1933, Vol. XXVIII, No. V.

Sodium Chloride and the Small Intestines, Thomas G. Orr, Annals of Surgery, October, 1931.

Carcinoma of the Colon, J. Shelton Horsley, Journal of the American Medical Association, November 2, 1929.

The Hopeful Prognosis in Cases of Carcinoma of the Colon, Fred W. Rankin and Paul F. Olson, Surgery, Gynecology and Obstetrics, February, 1933.

The Effects of Insulin and Dextrose on the Normal and Obstructed Intestine, J. M. Gage, Alton Ochsner and R. A. Cutting, Archives of Surgery, April, 1933.

The Significance of Water Balance in Health and Disease, Irvine McAuarrie, Journal of Pediatrics, October, 1933.

Carcinoma of the Colon; Intraperitoneal Vaccination by Mixed Vaccine of Colon Bacilli and Streptococci, F. W. Rankin and J. A. Bargen, Archives of Surgery, September, 1929.

Protection of Peritoneum Against Infection, B. Steinberg and H. Goldblatt, Surgery, Gynecology and Obstetrics, July, 1933.

Factors Which Decrease Risk in Operation in the Colon and Rectum, C. F. Dixon and J. T. Priestley, Surgery, Gynecology and Obstetrics, August, 1933.

MANAGEMENT OF HEMORRHAGE IN DUODENAL ULCER

M. C. HOWARD, M. D., and M. W. BARRY, M. D.,
Omaha, Nebraska.

Gastric hemorrhage is a symptom associated with a number of conditions. For this reason when it occurs, various etiological factors present themselves and we may hesitate in making a definite diagnosis. However in a study of patients with this symptom and from the literature we learn that the lesions commonly producing gastric hemorrhage are rather limited.

Rivers(1) has shown that 90 per cent of the patients with this symptom have a gastric or duodenal lesion. Of this 90 per cent he finds that 76.8 per cent were due to peptic ulcer, and 12.4 per cent were due to carcinoma. The remaining patients were found to have some other lesion as a cause for their bleeding; such as benign gastric tumors, cirrhosis of the liver, blood dyscrasias and other rare conditions.

Our experience parallels that as reported by Rivers and other authors. In a series of thirteen patients with gross hemorrhage into the gastrointestinal tract we found twelve patients suffering with peptic ulcer, and one patient with a gastric carcinoma. The carcinoma was located in the cardiac end of the stomach, had ulcerated through into the spleen, and from this latter organ arose the fatal hemorrhage. Other patients with carcinoma of the stomach have not presented this type of free hemorrhage. It does occur, but our experience has been that the bleeding from gastric carcinoma is usually a slow persistent oozing.

Since peptic ulcer is the lesion most commonly associated with severe gastric hemorrhage, the next question arises as to its location. Rivers again states that it is his experience that 75 per cent of bleeding ulcers occur in the duodenum. In the twelve ulcer patients being considered in this series we find the hemorrhage occurring in every instance from a duodenal ulcer. In the few gastric ulcers encountered in our practice we have not found gross hemorrhage as a serious complication. In fact we find very few gastric ulcers in proportion to the large number of duodenal ulcers which are diagnosed from history and roentgenological findings. The duodenal ulcers in this series are only those presenting massive hemorrhage with hematemesis as an additional sign of their presence. This is not in agreement with the usual opinion that gastric ulcers produce hematemesis whereas duodenal ulcers produce melena. Hematemesis and melena occur as complications of both duodenal and gastric ulcers.

The location of the ulcer in the duodenum may now be considered as to its liability to cause hemorrhage. The posterior wall of the duodenum is more vascular than the anterior wall. Ulcers situated in this area tend to open up a larger plexus of blood vessels with a resulting greater hemorrhage. As the ulcers extend posteriorly they usually involve the underlying pancreas. This portion of the pancreas now becomes eroded and another source of bleeding is encountered.

Allen and Bennett(2), reporting a series of 1804 duodenal ulcers in 628 of whom hemorrhage was a complication, found that when the ulcer was examined, either at autopsy or at operation, it was located on the posterior wall of the duodenum. The bed of the ulcer lay in the pancreas and this latter tissue was eroded. One patient in our series came to operation due to a recurrence of the hemorrhage and his ulcer was found in this area. At autopsy another patient had an ulcer so located. Recently a patient was seen on a surgical service who not only had a large bleeding ulcer on the posterior wall of the duodenum but a small contact ulcer on the anterior wall as well.

Ulcers situated in other parts of the duodenum tend to penetrate the gut wall. If this penetration is complete and extends into the abdominal cavity we then have the symptoms of a perforation, with an explosive peritonitis and a typical hard-shelled abdomen. Hence one might say that in duodenal ulcers the most frequent complication of those situated on the posterior wall is hemorrhage, whereas those on the other surfaces tend to perforate with a resulting peritonitis.

Whether the hemorrhage is moderate or severe depends upon several factors. We believe that in many instances a small artery may erode, bleeding occur, followed by hematemesis and signs of shock. If this occurs in a young individual with soft pliable arteries and treatment is instituted at once, the hemorrhage may be easily controlled. The blood picture following this type of hemorrhage may approach the normal findings. In two patients, aged 30 and 36 respectively, the haemoglobin was 70 and 76 per cent (Dare) and the lowest red cell count was 3,800,000. On the other hand in the older patients in whom there is evidence of a generalized arteriosclerosis we find that the bleeding is more difficult to control and the degree of hemorrhage is reflected in the low haemoglobin and red cell count. From this one may safely say that the older the patient, the more serious is this type of bleeding.

The effects produced by a hemorrhage depend on the quantity of blood lost and the period of time during which it is lost. The body can stand the loss of a far greater quantity of blood if it is lost slowly than if it is lost rapidly. The reason being that the tissues have an opportunity to compensate. Following hemorrhage, fluids are withdrawn from the tissues into the blood stream in an attempt to maintain a normal blood volume. This withdrawal occurs within a very short time.

CHART I

	Age	Occupation	Ulcer Sympt.	B. P.	Hb.	R. B. C.	Result
Mr. J. W.	55	Foreman	0	120-60	48	2,650,000	Improved
Mrs. J. O.	62	House Wife	+	120-60	26	1,560,000	Died
A. S.	23	Farmer	+		40	3,200,000	Improved
Mrs. M.	45	House Wife	+	142-60	49	2,300,000	Improved
Dr. R. O.	29	Physician	0	108-70	32	2,420,000	Improved
Dr. J. O.	28	Physician	0	110-60	45	2,800,000	Improved
Rev. L.	36	Clergy	+	130-70	70	3,800,000	Improved
Mr. M.	30	Salesman	0	130-65	76	4,280,000	Improved
N. H.	25	Farmer	+	118-65	48	3,600,000	Improved
J. H.	46	Laborer	+	100-56	50	2,750,000	Improved
T. M.	38	Dry Cleaner	+	136-70	65	3,030,000	Improved
T. A.	45	Janitor	+	110-64	52	2,800,000	Improved

Failure to maintain this normal blood volume, results in a falling blood pressure. When the systolic pressure drops to a certain level we may have not only the symptoms of severe shock, but also syncope and at times an acute asphyxia. The dangerous level for the systolic pressure in these patients may vary, but we consider 75 mm. of Hg. as the dividing line between possible recovery or approaching death. This general rule does not hold true in every instance. The only fatality in our series maintained a systolic pressure of 118 mm. of Hg. during a time when she was unconscious and twenty-four hours prior to her death. Hence one must be guided by clinical findings as well as by mechanical means in making a definite prognosis.

To supplement the clinical supervision of these patients we find that the laboratory may render us a valuable service. Serial blood counts frequently give us a graphic picture of the hemorrhage we are attempting to control.

Mr. J. W., age 55, on admittance to the hospital had a haemoglobin of 48 per cent and a red cell count of 2,650,000. Three days later the haemoglobin had dropped to 27 per cent and the red cell count was 1,570,000. This blood level was maintained for several days. Ten days after admittance his haemoglobin had risen to 40 per cent and the red cell count to 2,400,000. Six weeks later his haemoglobin was 68 per cent, whereas the red cell count was 5,100,000.

This lagging of the haemoglobin in comparison with the early return of the red cells to a normal level has been a constant finding in all of our patients with this lesion. The usual blood picture found in this type of patient is that of a severe secondary anemia. This is illustrated in chart one. The blood counts are those taken on admittance of these patients to the hospital. Chart two shows the fall and rise of the blood picture with the corresponding changes in the pulse rate and temperature variations in a typical case.

As the blood picture reaches a stationary level and then begins to improve, one will observe that the stool gradually changes from a black tarry consistency to a mixed brown and black stool. Eventually it assumes a light brown or yellow color, depending upon the diet and medication prescribed. With a recurrence of the bleeding the stool assumes a darker color depending upon the amount of blood lost. Fortunately none of our patients while in the hospital had a return of symptoms after their inital hemorrhage.

CHART II

Mr. J. W. Age 56. Serial data obtained while in hospital. Diagnosis: Bleeding Duodenal Ulcer.

	Hg.	Reds	Whites	Pulse	Temp.	B.P.	Melena
June 6	48	2,650,000	8,400	108	99°	130-70	‡‡‡‡
June 7	42	2,340,000	11.900	116	100°	118-60	
June 8	27	1.570,000	10,350	130	103°	118-70	‡‡‡
June 9	29	1,860,000	12,800	130	102°	114-65	‡‡
June 10	29	1,820,000	8,900	112	100°	110-60	‡‡
June 11	30	1,810,000	6,900	108	99°	120-80	‡‡
June 12	30	1,810,000	6,100	106	99°	120-70	‡
June 16	40	2,400,000	6,200	86	98°	118-70	‡
July 14	68	5,100,000	5,500	74	98°	165-90	0

The symptoms of which these patients complain when first seen, are weakness, heart trouble, headache, pallor, epigastric pain, hematemesis, nausea, vomiting and black stools. The first four symptoms are those associated with a number of conditions, but the pallor of these patients is diagnostic of a blood loss. When this blood loss manifests itself only in the stool and not in the vomitus, the patient will frequently consider this color change in the feces as due to diet or medication. When hematemesis and acute gastric pain accompany the above symptoms, one is justified in making a tentative diagnosis of a bleeding duodenal ulcer.

The patients in this series were seen for the first time during their inital hemorrhage, either in private practice or in consultation. The question of a previous gastric history was elicited. In four of these patients a careful inquiry into their past history lead to a flat denial of any symptoms pointing to a former gastric disturbance. Even after the hemorrhage had been brought under control, and the duodenal deformity confirmed in the x-ray laboratory, they believed that the diagnosis of duodenal ulcer was doubtful. In the remaining eight patients a history of some previous gastric disturbance was elicited. This history varied from an indefinite sensation of fulness after meals, to that of a classical ulcer.

The clinical progress of these patients follows a fairly definite course. In this series, two patients after the first symptoms of their hemorrhage had ceased, felt perfectly well and comfortable. In the remaining ten patients the haemoglobin and red cells continued to fall for several days. The haemoglobin varying from 40 to 26 per cent. The red cell count dropping as low as 1,560,000 in the fatal case, but usually stopping close to 2,000,000. The pulse rate shows a definite change, both in frequency and volume. The rate increases and the systolic blood pressure decreases in proportion to the amount of blood lost, and the time during which it is lost. During the change in the blood picture, the pulse rate, and the blood pressure. we invariably have found a rise in the temperature which reaches it maximum on the fourth or fifth day following the inital hemorrhage. At this time the question of surgical intervention may be considered, but we believe that this is not necessary. The temperature has always returned to a normal level within a few days and remains at this point or subnormal during the remainder of the time the patient is under treatment. Other than these symptoms we may have others of a lesser degree which are readily controlled under the plan of treatment which we use.

This treatment has been conservative and based upon the fact that if the ulcer can be protected, and repair instituted, the bleeding can be controlled. Balfour(3) states that death from a single hemorrhage is a rare occurrence. Lahey(4) believes that in less than two per cent of the peptic ulcers, complicated by a massive hemorrhage, radical treatment is required, especially since a high mortality is associated with this procedure.

On the other hand Benedict and Allen(2) state that the 14.5 per cent mortality in their series following conservative treatment is too high. They are of the opinion that more of these bleeding ulcers should be operated on early in their clinical course, and an attempt made to eradicate the ulcer and thus cure the patient. This is difficult due to the numerous blood vessels involved. The identity of these vessels at operation was so obscured by the surrounding inflammatory reaction, that they could only intercept them as the tissue about the ulcer was divided. In the eight patients treated surgically, their mortality was 100 per cent, but this operative group included only those patients who had not responded to medical treatment, and all hope had been lost for a spontaneous recovery.

The plan of treatment, which we have used with occasional alterations is as follows:

First: The patient must remain at absolute rest, not only during the time of the active hemorrhage, but for a period of two to three weeks after the stool has become negative to the usual blood tests. Many of these patients respond very quickly and believe they should be given room privileges. This is dangerous. During the first few days, morphine sulphate is administered at frequent intervals to produce this rest. Later some of the milder sedatives may be used. Ice bags are applied to the abdomen, and are an aid in keeping the patient in one position.

Second: In the more recent cases and especially in those patients who are nauseated, who are vomiting or show signs of an excessive tympanities, gastric lavage has been used. This should be done morning and evening, and warm tap water is preferable. By this procedure not only is the regurgitated blood in the stomach removed, but the usual beneficial effects of a gastric lavage are obtained. As a routine measure. Sopher(5) employs a retention nasal catheter in this type of case, using the catheter not only for lavage purposes but also for the feedings and the more direct observation of the hemorrhage. This we do not believe is necessary.

Third: Since the hemorrhage in these patients depends upon the activity of the ulcer, we feel that the sooner the ulcer is treated the more quickly will the hemorrhage be controlled. We immediately prescribe a diet that consists of three ounces of milk and cream. This mixture is given at two hour intervals from eight a. m. to eight p. m. We alternate these feedings with sodium bicarbonate, twenty to sixty grains, from nine a. m. to nine p. m. Tap water is given between the feedings in sufficient quantities to relieve the patient's thirst. On the third to the sixth day, gruels may be substituted for the milk feedings, and as the hemorrhage is brought under control, the diet is increased. This dietary and medical program is a modification of the Sippy plan as used in all types of ulcers. In our experience it may be used to good advantage in those patients having a massive hemorrhage as a complication of a duodenal ulcer.

Fourth: Bowel management is regulated by prescribing one or two ounces of mineral oil each day. If needed, enemas should be given every other day, and occasionally a glycerin suppository may be used. From the use of enemas we have seen nothing but beneficial results, and never any adverse effects from its supposedly stimulating action on the gastro-intestinal tract, and in this instance the bleeding ulcer.

COMMENT

In the above plan we have not used transfusions, hypodermoclysis or the other measures commonly used in the management of all types of hemorrhage. In the plan of treatment offered we believe that if the cause of the hemorrhage can be eliminated, the symptoms associated with this condition will disappear. In our opinion surgery is contra-indicated during the acute hemorrhage. In the eight cases reported by Allen and Bennett four of their patients died of a post operative hemorrhage, and the other four of various causes. In the cases we are reporting, we have had one death. If this type of ulcer should become active at frequent intervals, with hemorrhage as a complication, surgery should then be considered, but only at a time when the hemorrhage has been controlled by medical management. The ulcer may then be removed. In our experience only one patient has come to operation following medical treatment. Patients with this type of ulcer should be carefully instructed in their dietary management. A bland, non-irritating diet should be prescribed for at least two years, and stimulants of all kinds eliminated.

Hence a medical plan of treatment is used which not only attacks the ulcer, the source of bleeding, but offers to the body, sufficient food and fluids for its metabolic needs.

SUMMARY

1. The commonest cause of hematemesis is peptic ulcer.

2. Almost all cases of hematemesis in these ulcers can be controlled by the treatment outlined.

3. Hematemesis in older patients is more serious due to the sclerotic changes usually found in the vessels.

4. A method for the management of cases of hematemesis in duodenal ulcer is presented.

BIBLIOGRAPHY

1. Rivers, A. B., and Wilbur, D. L.: Arch Int. Med. 50-621-1932.
2. Allen, W. A., and Benedict, E. B.: Ann. of Surg. 98-736-1933.
3. Balfour, D. C.: Jour. A. M. A., 89-1656-1927.
4. Lahey, Frank: Jour. A. M. A., 95-313-1930.
5. Soper, H. W.: Jour. A. M. A., 97-771-1931.

Chart 2: Mr. J. W., age 55, showing course following hemorrhage.

DISCUSSION

DR. L. D. McGUIRE, (Omaha): I think we certainly should discuss this paper on "Management of Hemorrhage in Duodenal Ulcer," and compliment Dr. Howard on his very fine presentation.

I want to discuss the one case that died, which is just part of a series of cases which will always die from hemorrhage from duodenal ulcers. There is a small percentage where the hemorrhage is from an artery of rather large caliber. Practically always in this severe bleeding type of ulcer it lies on the posterior walls of the duodenum alone the pancreas. This group with the rather large artery will always die unless surgery is undertaken, even in the presence of a high risk. The whole group will die unless operated on. Part will die even if operated. I think we should attempt to save that portion which we may.

There is a certain group where, as you see the patients, you can see the hemorrhage has been massive and repeated. The patient had the first symptoms a few hours before. These patients are extremely pale. The pulse is rapid. The blood pressure has fallen, but sometimes is maintained between 100 and 120 until the point of collapse. Don't depend entirely upon the blood pressure. You will find the blood count is rapidly going down.

This group Dr. Howard is allowing to die. I do not believe he should. I think the patient who is sick and looks like he will enter into that group should be grouped for transfusion, and not only should one donor be obtained, but five or six good donors. They should be kept available for our use. At the same time, the medical man should pick out his surgeon, call him in, and have him available, also; so that when the critical time arrives, he can do his work.

If one waits until the pulse is 160, and the blood pressure has reached a collapse stage of 40 or 50, don't bother calling the surgeon. Call the undertaker.

If the surgeon is handy when the hemorrhage is continuing at a rapid rate so that we know the vessel is fairly large and probably will not close, then that patient should be transfused. If we find a moderate rise in blood pressure and blood count, and in thirty minutes we find it has dropped again almost to the level before the hemorrhage, start a second transfusion right then, because you are dealing with a big vessel. Perhaps you may give a third transfusion in the operating room while preparing for surgery. With the blood of perhaps the third transfusion nicely started in the vein, open up the abdomen and you will find a tiny ulcer on the anterior wall of the duodenum. That is not where the bleeding is coming from. It should be opened in the anterior wall wide enough to get a nice exposure of the posterior wall, where you will most likely find your bleeder. You will note the ulcer and a big, spurting vessel. This can be controlled by ligation or cautery, the jejunum closed and no further surgery done, and a large number of those patients will be saved. That is the group in which that one case who died comes.

If the patient has had a very fine medical treatment such as Dr. Howard outlines, bleeds a few months later and is again given medical treatment, and again bleeds, it means the ulcer is involving a fair-sized vessel, and sooner or later, if he be kept on medical treatment, he will have a hemorrhage of a massive size and will bleed to death.

This group should be operated upon, and surgery must be done which eradicates the ulcer. If a gastroenterostomy is done, the patient may still bleed to death. You may cure the symptoms sometimes, but not the hemorrhage. A lot of them are cured with a rather small risk by combining with gastroenterostomy a cautery of the ulcer. Others, however, do better by more radical procedure, such as removing a portion of the stomach and the duodenum far enough over to include the ulcer and the bleeding area.

DR. J. D. McCARTHY, (Omaha): I want to add a word in regard to the operative procedure on hemorrhaging. We are confronted with the question whether or not to operate. There enters into the question the matter of ectopic bleeding. I think we must consider our patients first as individuals. When we start stereotyping men and women, we are going to get into trouble. I think each case must be individually studied. I feel like Dr. McGuire—that there is a certain percentage which certainly should at least be given an opportunity of cure—if not cure, at least a chance. I also feel—whether it is because of prejudice in early training or what—that absolute rest is certainly very necessary in the cases I have seen.

The only thing I have attempted to give in early stages of acute bleeding has been cold raw egg in small amounts—nothing else by mouth. It seems to have been most palatable. If fluids are going to be used, they should not be used to a great extent by mouth.

I never have used the tube, and I doubt whether or not it is the proper thing to do in that stage of hemorrhage.

DR. H. W. BENSON, (Oakland): It seems to me that the eleven cases Dr. Howard has carried through so successfully hardly need any discussion; it is the twelfth case or cases like this on which the discussion should center.

There is an old axiom that bleeding ulcers do not perforate; that perforating ulcers do not bleed. That carries it to the question of what to do for the bleeding ulcer. I think that it requires a great deal of skill and acumen to determine which case of a series of bleeding ulcers you should operate. If we can have some criterion—those of us not able always to have the cooperation of consultants that Dr. Howard has had—by which we could determine which of these bleeding cases we should open, that would help solve the problem. When such a criterion has been evolved by which we can tell when to operate and when to let them alone, I think we have gone one important step in the treatment of these cases.

DR. R. RUSSELL BEST, (Omaha): I would like to mention several points regarding this interesting paper on gastric hemorrhage. The first is the question of the blood pressure and the blood picture. I disagree with the previous discusser upon this one point: When the blood pressure starts going up and the hemoglobin starts going down, that is my sign of cessation of bleeding. The hemoglobin does not start going up immediately after the bleeding stops. When bleeding ceases, the individual begins to absorb fluids from his tissues and dilutes his blood. If we can see the two lines crossing each other, one ascending and the other descending, before the upward curve for the hemoglobin begins, we know the patient is making progress.

The second point is that I cannot agree with my friend, Dr. Howard, in its management. If a uterus is bleeding, we stop it by emptying it and keeping it quiet and contracted. If an extremity is bleeding and we wish to promote further bleeding, we start treating it roughly. In conjunction with this, we might mention the x-ray on a twelve-hour plate after a barium meal when the stomach is at rest and markedly contracted.

In treating bleeding ulcer, I think we should attempt to promote contraction of that stomach. I do not believe you promote contraction by putting anything into it. I believe all fluids and foods should be withdrawn immediately. The cases I have seen where the question of surgery had been brought up as a means of stopping the bleeding, and these are cases of repeated early hemorrhages, usually have had milk and cream and alkaline powders. When everything was withdrawn, bleeding in most instances stopped.

The question of washing out the stomach, personally speaking, I believe is poor technique in most instances. However, when the patient has bled severely one day, and has had a severe hemorrhage several days later, it may be possible to save a life by putting a small nasal catheter into that stomach and washing it out with a small amount of cold solution.

Why put cold on the abdomen and wash out the stomach with a warm solution? We do not know much about that. I was reading an article in German literature where it was proved heat decreased the secretions of the stomach. I usually use cold 1/1000 ferric chloride, about 8 to 12 ounces. Also on three different occasions—and I do not know whether it stopped the bleeding—I put down two drams of adrenalin solution, hoping it would drop on the ulcer.

I believe there are two indications for surgery. First, in acute hemorrhage. If the patient has sclerotic arteries and has bled profusely and has had repeated hemorrhages during the stay in the hospital, I believe he is a candidate for surgery. That, however, is the unusual case. Second, is the individual with repeated hemorrhages. I believe the indication for surgery with this type is the individual who has had more than three gastric hemorrhages while under the management and treatment of the medical man. After the third hemorrhage, he should be recommended for surgery.

DR. F. J. SCHWERTLEY, (Omaha): This very intelligent paper has developed into quite a scientific discussion. The literature says nothing about venous hemorrhage in ulcers at this location. Dr. Howard went into the arterial situation very nicely, but it is my thought that the majority of these cases have a slow venous oozing long before the eroding of the artery, as the wall of the former does not resist this erosion as well as the latter. There is a very definite venous plexus between the medial wall of the duodenum and the head of the pancreas, and these veins are, as a rule, valveless, and I believe the anemia following erosion of this venous plexus is slow and progressive. Some of this oozing comes from the pancreas and some from the margins of the perforation. Writers of various articles who demonstrate the surgical procedure with drawings, concentrate on arterial hemorrhage only and invariably recommend the ligature of the artery and then proceed to various resections, or short-circuiting operations, with the patient having the symptoms as outlined by Dr. Howard.

Ordinarily, I believe surgery is contra-indicated unless a large arterial branch has been opened by the ulcerating process. We must also remember that surgical deaths resulting from procedure in this region, are undoubtedly due to a pancreatitis, and if ligature is performed, no further procedure should be attempted, as advised by Dr. McGuire. The immediate institution of medical treatment will, I believe, eliminate transfusion in all cases with the possible exception of those where a large artery is eroded.

DR. HOWARD, (closing): I wish to thank the gentlemen for their very frank discussion of the paper, and that is what I was hoping for at the time the paper was written.

Over a period of years, as you go through the literature you will find that the management of bleeding ulcer has been handled in somewhat of a hit-and-miss manner. I personally feel that those individuals who have a severe massive hemorrhage as a complication of a duodenal ulcer can be handled better if we forget the hemorrhage for the time being, and attempt to restore some form of repair in this ulcerated area in the duodenum.

This was the idea I had in mind after using the older methods of treatment, and it was something I started with a certain amount of fear, for I knew that the majority of men felt that anything placed in the stomach would irritate the ulcer. My personal experience in the twelve cases cited and the one individual with the serial blood counts in whom the hemoglobin dropped from 48 to 25 per cent, and the red cells dropped as low as 1,575,000, shows that at the end of five days the bleeding seemed to be under control, and the stool examination verified such an opinion.

As to the use of the stomach tube, I also thought, as does Dr. Best, that a tube placed down the esophagus of one of these patients might not only perforate the ulcer, if it were a gastric ulcer, but would certainly increase peristalsis. However following the gastric lavage, I find the patient greatly relieved, and the subsequent feedings and the administration of alkalies seem to produce a much better result.

As to the point whether the stomach is being kept at rest, I again disagree with Dr. Best. I believe that if an ulcer is bleeding and blood is being regurgitated into the stomach, that the stomach, in its attempt to digest this blood, will become as active as it would be under any form of food that might be placed in it. I feel if we would take this same type of individual and, following gastric lavage, start treatment of the ulcer and forget the hemorrhage for the time being, the result obtained would be better than that under the older plan of treatment.

I realize one is taking a distinct path from the old one we followed over a period of years in the management of these cases; but I still hold to the axiom I mentioned this morning, that if we treat the ulcer and can institute repair, the bleeding of itself will be controlled.

I again thank the surgeons and the various men who discussed this paper.

FRACTURES OF THE FOREARM*

B. R. McGRATH, M. D., F. A. C. S.,
Grand Island, Nebraska.

No more complicated mechanics are found in any part of the human body than in the forearm. Nor is a disturbance of skeletal and muscular mechanics more disastrous in any other part of the body.

In this association, composed very largely of general practitioners who have and will continue to have the care of the large majority of fractures, it seems proper that we review, occasionally, some of the problems arising in this very important part of fracture surgery.

Anatomy: The ulna and radius, with which we deal, are joined firmly together in a large part of their length by the interosseous membrane which permits the two bones to move independently only in the rotary movement. The ulna takes the important part in the elbow with its strong hinge to the humerus which does not permit rotation. It, therefore, is the post around which the radius swings on its attachment of interosseous membrane and ligaments at the extremities. The radius gets the important place at the wrist joint and carries with it, in its rotation, the hand to which it is bound firmly by the strong ligaments at the wrist.

Supination and pronation are the result largely of the action of two muscles, the supernator brevis and pronator quadratus. These muscles are at opposite extremities of the bones. The supinator arises from the external condyle of the humerus and the upper extremity of the ulna. It wraps around the neck of the radius and is inserted there and along the anterior surface of about the upper third. Acting as it does, directly across the bones it exerts a powerful supinating action. It is powerfully opposed by the pronator quadratus acting transversely across the anterior surfaces of the two bones at the lower extremities.

Extensor and flexor muscles originating on humeral condyles and on the bones of the forearm and inserted at the wrist, hand and fingers are the elastic strings to the rigid bows—radius and ulna. Breaking of the bows leaves this force unopposed to bend or overlap the two bones.

In reduction of fractures of these or other long bones, there are three essential requirements to be met:

First: End bearing.
Second: Good alignment.
Third: Proper rotation.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, May 22-24, 1934.

In mid-shaft the completeness of end bearing is not a matter of great importance. The principle given by Campbell for treatment of fracture of the femur, applies here as well. The ratio of end bearing whether 1:1, 1:4 or 1:16 is not important. It is sufficient that we have end bearing. This becomes a very different problem when the fracture is near a joint. A Colles' fracture reduced to 1:10 would give a decidedly bad result. Nothing will do here but complete 1:1 reduction. End bearing should be of bone to bone. Open operation may sometimes be required to secure this condition. It is my belief, however, that interposition of soft parts, is made the excuse for operation much more frequently than is justified. It seems very probable that the jagged ends of fragments drag soft parts into the fracture in many cases. It also seems very probable that, in the majority of these cases, the powerful and continuous crushing sustained by the tissues so caught would quickly eliminate them through a process of pressure necrosis.

Good alignment is perfect alignment.

The greenstick fracture presents this problem alone. The unfractured portion of bone compels end bearing and prevents rotation of the fragments. Alignment is made more difficult, however, because the break on one side fills immediately with blood clot which does not compress sufficiently to allow the bone to resume its normal form. The problem of alignment in greenstick fractures has seemed so difficult to some that they advocate making complete fractures of them. While perfect alignment is desirable in most fractures and we should make it a rule to secure it along with end bearing and proper rotation. at the first treatment, the rule may be dispensed with in greensticks. It is my custom to gradually straighten the bones by compression between two boards. One long board is applied posteriorly from tip of the olecranon to tips of fingers and one short board from elbow to wrist anteriorly. With a bridge of unbroken bone holding, we need not concern ourselves whether the hand is in pronation or supination. Daily adjustment of the padding and bands usually bends the bones into line as the blood clot softens and is forced out of the break.

Complete fractures with overriding fragments present all the problems, sometimes in very difficult form. So difficult are they that the very conservative fracture committee of the American College of Surgeons has listed these fractures amongst those that may require open operation. The tremendous force of combined action of muscles pulling longitudinally makes reduction by brute strength impossible. Under deep anaesthesia and with the aid of the fluroscope these breaks may be reduced without great force. The first movement is sharp flexion at the point of fracture so that distal fragments form an acute angle at the break, with the proximal fragments; and with the broken ends in apposition. Second, holding the jagged ends caught together, the arm is straightened. Muscular action, now comes into play in a friendly way to hold the rough ends together. If we, by this maneuver, have secured end bearing on only one bone, the third act of the operation is directed toward securing end bearing in the other fracture. The fracture now having end bearing is used as a fulcrum. The distal fragments are bent laterally, moving the hand toward the side in which reduction was made. This lifts the unreduced fragments apart so that they may be manipulated into place. The fourth procedure will be to secure proper rotation. The action of the supinator brevis when freed from opposition of the pronator quadratus is to completely supinate the proximal radial fragment. Since we have no control of this proximal fragment, we control the distal fragment by supinating the hand to match the supination above. Failure to supinate the hand, results in a permanently pronated hand. This supination is held by a splint moulded to the posterior surface of the arm from above the elbow to the tips of the fingers. A short anterior splint may also be applied to the forearm. Failure to secure reduction by this method is usually due to lack of nerve in making the extreme deformity necessary for approximation of the broken ends of fragments. The palmar surface should be bent forward. In this position, the large ulnar and radial arteries and nerves are relaxed and drawn away from the fractures, not tightened over them.

If it seems difficult to secure alignment we may wait for solution of this problem until soft union has occured. We may then feel that the first two problems of end bearing and rotation have been successfully solved and turn our attention wholly to the third. Splints may be changed to produce such compression as may be necessary to straighten out the fragments. Treatment, now, is very much the same as that of greenstick fracture. This cannot be managed without frequent removal of splints for inspection, readjusting and repadding.

Colles' fracture still remains one of the most difficult forearm fractures to manage. All three of the fracture problems must be solved perfectly in its treatment. Perfect end bearing is made hard by the nature of the injury. When one falls on the palm with the hand extended, the anterior ligaments of the wrist are stretched. The fracture begins with a crushing of the bone at the posterior surface of the radius, while the anterior, tightly drawn surface snaps sharply across. The short distal fragment may then slide over the proximal fragment and be tightly impacted on its posterior margin. The resulting broken surfaces do not fit well together. As the fracture occurs, the ligaments at the ulnar extremity hold, for a time at least, and the hand, with its attached lower radial fragment, swings around this point as a center. The later result of the force may be to tear off the styloid process of the ulna or to tear the internal lateral ligament. We have now fragments crushed and shortened posteriorly, sharply broken and full length anteriorly. The distal fragment displaced backward and impacted on the edge of the proximal fragment. The distal fragment rotated around the styloid process of the ulna. The styloid process broken off and the internal lateral ligament torn. All these conditions must be corrected by the reduction.

X-ray is of little value in diagnosis or as an aid before reduction is made. The picture helps to check accuracy after the work is done. In my estimation, the hand shaking method best meets the requirements for this reduction. The operator grasps the hand of the patient with his hand of the same side, as for a hand shake. With his other hand, he grasps the forearm above the break. The hand is brought backward, increasing the deformity, and extension made until the impaction is loosened. Then the hand is flexed forward at the wrist and rotated forward around the ulna. Adduction of the hand brings into apposition the structures at the end of the ulna. It may be necessary to adjust the short fragment forward by pressure of both thumbs on its posterior surface, while fingers make counter pressure on the radius in front. We must have exact end to end bearing marked by the sharply broken anterior edge. We must have perfect alignment, which is held by the tight posterior ligament, and temporarily leaves a gap between the crushed posterior edges to fill first with blood clot and later with new bone. We must get proper rotation by twisting the hand. No other splint seems to hold this complicated reduction quite so well as does the posterior moulded plaster of Paris splint. The plaster of Paris bandages are laid on the back of the arm from elbow to ends of fingers while the wrist is carefully held in full flexion, adduction and rotation. To hold adduction and rotation the plaster should be moulded somewhat around to the palmar surface between the thumb and index finger. No part of the splint should be made to go onto the anterior surface so far that it will prevent ready removal of the splint from the arm. A light anterior splint may be made to fit along the forearm and palm though this is usually not necessary.

The period of disability may be very much shortened by building a new splint at the end of two weeks that will straighten the wrist, and still later, this one may be discarded for an anterior splint that will put the hand into a moderate cock up position. Frequent removal of splints for massage, passive movements of fingers and redressing are beneficial, but in the early part of treatment it is important that the wrist be held in the position of reduction while the splint is off. Plaster is the ideal material for splinting this fracture. Ready made splints cannot exactly fit different individuals and exactness is necessary here. Boards cannot meet all the requirements. Very bad results are sometimes seen when the curved anterior surface of the wrist and hand are forced to fit a straight board. Padding, put on to make a board fit the curves, compresses and fails to preserve the normal contour. Mechanical accuracy in reduction and in splinting is the requirement for success in this fracture.

Time does not permit review of fractures in the region of the elbow in this paper. There is one complication sometimes accompanying fractures of the forearm and most frequently those of the region of the elbow, that must be kept in mind. I refer to Volkman's ischaemic paralysis. These are the cases in which pressure leaves just enough blood supply to prevent gangrene but not enough to nourish muscles and other tissues. The muscles become fibrous contracted cords. The hand becomes a stiff, contracted set of claws. Interference with circulation may be from tight splints or it may be from haemorrhage or oedema under the tough fascia at the elbow, but whatever the cause, it must be promptly recognized and promptly relieved. After reduction of fractures and proper dressing, there should not be much pain. If severe pain is present, investigation should be made. Evidence of poor venous return—blueness of skin or finger nails—should always be investigated. There is rapid progression of this complication and prompt action is required. Events are in a vicious circle. First pressure retards return of venous blood, then an inflammatory process begins, chiefly in muscles, the muscles swell. Swelling tightens dressings still more. For prevention of this serious condition, observance of certain rules is necessary.

1. Circular plaster splints should not be used in treatment of fractures of the fore-arm or elbow.
2. Prompt investigation of pain and other unusual symptoms is necessary.
3. Pressure by bleeding or oedema under the fascia should be relieved by incision through the fascia.
4. Frequent inspections are necessary, especially in the early period of treatment.

If symptoms of contracture develop we need not sit idly and look upon it as a visitation of Providence. There are things to be done. Release of pressure by loosening dressings and. if necessary, incision of fascia has already been indicated. Prevention of the contracture when it is seen to be starting should at once be undertaken. The banjo splint has been used but still better is a cock up plaster splint made to fit the palm of the hand and long enough to go beyond the ends of the fingers. It should be wide enough to accommodate the fingers widely separated. The splint should be moulded to the palm with the wrist and fingers extended as far as possible. Slots are cut in the splint even with the mid-phalangeal joints through which small bandages are passed to tie these joints down to prevent them from humping up when the hand is put in extension. This splint may be a part of one used in the treatment of the fracture. It may not be possible to get full extension with the first or second splint made, but by perseverance the full cock up position may be secured. Heat, massage and passive motion are useful. If we let them the muscles of the forearm will degenerate into small, tight, fibrous cords with little or no contractile fibers in them. The surgical treatment of this condition is not within the scope of this paper.

If, in this paper, it has been impressed that fractures of the forearm require very careful attention to certain details; that they require frequent inspections and readjustments of dressings; that merely setting a fracture and putting on some form of splint to remain until the bones have healed is to court disaster; it has served its purpose.

DISCUSSSION

DR. V. V. SMRHA, (Milligan): It seems to me there is at least one point that needs criticism in Dr. McGrath's paper. We are not here only to agree to everything that is said, but to criticize. I think there are many of you who would not have the nerve, in complete fracture of both bones of the forearm, to bring them into an acute angle to get a position. One of the things we must guard against is interference with the soft tissues between the two fragments. If you want to get them caught, I think you can do it best by making an acute angle and shutting the jaws of these separated bone fragments. I have never had soft tissues between the two fragments, and I am not going to make any acute angles.

DR. McGRATH, (closing): In the treatment of Colles' fracture, I use some form of immobilization for six or seven weeks, but not in the same position all that time. If we leave the wrist in one position when the splints are removed, we will have a very stiff wrist. After enough union has occurred to hold the fragments, you may come up with the hand somewhat, and later, still further, to a cock up position. With some passive motion we are able to keep from having that rigid wrist and hand which keeps a man disabled for a long time.

In regard to Dr. Smrha's criticism of this method of reducing fractures. As I said in my paper, I do not think interposition of soft parts is as serious a complication as has been stated. Dr. Smrha says he has not had a case of interposition of soft parts between fragments. I am sure he has treated a great many fractures. They were at all sorts of angles. He has had some thrown into more acute angles than I have described in this reduction, yet there has been no interposition of soft tissues. I have used the method a great many times in reduction of these fractures, and I have yet to see one develop a nonunion because of interposition of soft parts. As I said, failure would be because of lack of nerve.

THE DISEASED UTERINE CERVIX, WITH A PRELIMINARY REPORT ON SCHILLER'S LUGOL TEST

R. J. STEARNS, M. D.,
From the Department of Gynecology, University of
Nebraska College of Medicine,
Omaha, Nebraska.

A very good paper was given on this same subject at our meeting last year by Dr. M. E. Grier(1). I am wondering how many doctors who listened to that paper or those who later read it in our Journal, are now putting those suggestions into practice.

If one is to judge by the stories given us by the women coming to the University Hospital from all over the state I would say that quite a number of physicians need further stimulation. Many of these women have seen their family doctor not only once but many times and yet nothing of any real value has been done for their diseased cervices. In some instances no attempt was even made to view the condition.

The causes for this attitude on the part of the profession seems to be: first, a lack of appreciation in the significance of a vaginal discharge, and in these instances all that is prescribed is some type of a vaginal douche; second, in not recognizing a badly diseased cervix and, then treating the condition only with drugs by the method of application and packs; third, in fully realizing the significance of the diseased cervix with its dire possibilities of future cancer, and so advising radical surgery or nothing. Can we not do more of real value for these diseased cervices and these suffering women?

Let us review very hastily the structure and tissue involved and get a definite idea of what we have to treat. May I call your attention to the normal cervical structures and note in particular the type of high columnar cell lining the canal and the deep branched glands that make excellent harboring places for bacteria.

After infection, either by the gonoccocus or some other form of bacteria, the mucosa of the cervix becomes swollen, edematous, with the loss of the cilia. The earliest stage is represented by an infiltrated area on the portio denuded of squamous epithelium as a result of necrosis and maceration of the surface layer, a true erosin. The columnar epithelium under constant irritation of infection pushes itself out on the vaginal aspect of the cervical rim, thus replacing the stratified squamous epithelium and producing the so-called erosion or ulcer. The continued congestion produces a hypersecretion of mucus and a hyperthrophy and hyperplasia of connective tissue. The outlet of the glands become closed with resulting cyst formation known as Nabothian cysts. This produces an enlargement and distortion of the cervix.

How long would you or your patient allow an abnormal and pathological condition, such as a large eroded cervix, go undiagnosed and untreated if that condition were on an exposed part of the body? Why then, should we, knowing that these conditions exist to some extent in seventy to eighty per cent of all married women and knowing the possible death dealing qualities in them, pass this condition by with no serious consideration or treatment. Obviously medication to the external os is not going to clear up this marked pathology. Douches will no more cure this chronic endocervical infection than gargling the throat will cure a chronically infected tonsil. It seems evident that some method of treatment is demanded that will rid the cervix of the major portion of the infected tissue. The destruction of this chronically infected tissue may be accomplished without the more radical surgical procedures. While the operative removal of diseased cervical tissue has and will continue to have a place in the treatment of these cases yet the indications for operation have greatly diminished with the advent of the electro-cautery and electro-coagulation. Although the cautery treatment has been used for at least thirty years, yet it seemingly has been accepted by but a small per cent of the profession.

During the past five years at the University of Nebraska Dispensary we have examined the cervices of some 2300 women and of these about 70% had some form of diseased cervix. A definite erosin was present in 50%, but of the total diseased cervices only fifteen or .016% were definitely carcinomatous. The first impression might be that with so small an incidence of cancer why worry about the possibility of a cancer developing on the basis of a diseased cervix, but we must remember that a large per cent of these patients were young women, and that if they go on for the next ten or fifteen years with their diseased cervices there will no doubt be a very much larger incidence of cancer found at that time.

From the reports of Bartlett & Smith, Pemberton and Huggins in their 10,647 cases of chronic endocervicitis treated by cauterization or repair only five cases of cancer developed. We agree with Proctor(2) who says, "Whether we take this as one hundred per cent true or not it does at least indicate the real value in the proper care of the diseased cervix." J. E. Davis(3) after a study of 1200 cervices concludes that, "Mature normal tissue cannot pass over into a state of malignancy. Beginning malignancy is found in immature stratified epithelial cells which are exposed to chronic inflammatory effects. Adequate treatment of laceration, erosion, ectropion, infection and ulceration, prevents cancer in 90 to 100% of cases."

With this possibility in mind we have made every effort to rid the cervix of as much of the infection as possible that these women will not only be relieved of their present symptoms but lessen the hazard of the future more serious development of cancer.

The form of treatment we have used in addition to the topical application of drugs, medication with tampons and douches has been the use of the electro-cautery, high frequency conization and surgical removal.

The condition of the cervix will indicate the form of treatment to be instituted. One may classify them into two general types of acute and chronic cervicitis. The acute condition is found in the very large per cent of cases to be due to a gonococcus infection. This condition is treated with topical applications, medicated packs and douches. The chronic condition may have originally been on a gonorrheal, a post abortal, or a post partum basis, and rarely we find in a nulliparous a diseased cervix with none of these factors to account for the condition. I think it makes little difference what the original exciting factors may have been, we now have a diseased cervix that needs more than medical treatment. We may now divide these pathological cervices into several groups on the basis of suitable treatment.

The cervix with a small or moderate amount of infiltration and deformity, but with a definite erosion and quite often some degree of laceration is best treated with multiple linear light cauterizations of the cervical lips. If after sufficient number of these treatments there is a well healed external cervix but an excessive discharge persists then one or more intracervical cauterizations may be done which will bring about a cure.

The operator should at all times keep in mind the tendency of dormant infections, particularly of the gonorrheal type, to become virulent on stimulation and result at times in a severe adenexal or pelvic peritoneal inflammation. therefore too early and vigorous treatment with the cautery must not be given.

The cervix with a marked enlargement due to excessive round celled infiltration and marked cystic degeneration of the glands, either with or without an erosion, ectropion or laceration is best treated with more radical measures. We have the choice of several methods: One, surgery, such as the Sturmsdorf type of conization and relining with a flap of vaginal mucosa; two, electro-coagulation with the tungsten cold wire loop, doing a conization which removes all the infected gland bearing tissue and endocervical mucosa and is relined by squamous epithelium from the vaginal portion of cervix; three, multiple punctures of the cervix with the hot electro-cautery and deeper intracervical cauterization, depending on the actual destruction of some glands and the attenuation and destruction by transmitted heat in many more glands.

Our experience has been principally with the electrocautery and the Sturmsdorf type of operation.

The outstanding advantages of the electrocautery treatment is that it can be used by every physician who can recognize a diseased cervix. The equipment is comparatively inexpensive. One can outfit himself to do a large per cent of the work with as low an investment as fifteen dollars. It is an office treatment requiring no anesthesia and has few complications. There are few gynecological conditions so neglected and yet so amenable to treatment and none in which the results of this form of treatment are so gratifying. Accepting the statement so often made by men of large experience that 90% of all cervical carcinoma are found on the basis of a chronic cervicitis should we not be challenged by the opportunity that is ours in lowering the high mortality from cancer of the cervix by this simple prophylactic procedure.

The Sturmsdorf operation, of course, is a satisfactory method of taking care of the diseased cervix but requires hospitalization and all that entails time and expense.

The method of electro-coagulation as first brought out by Hymas(4) of New York has quite a few enthusiastic supporters. The chief disadvantage is that the majority of the profession will not have the necessary equipment which costs from 800 to 1500 dollars. There are many advantages the chief of which are: Simplicity of operative procedure, non-hospitalization, complete removal of infected tissue, affords good lymphatic drainage and few complications. We have just begun the use of this method at the University hospital and have not had opportunity to check our end results on enough patients to give a final opinion on the procedure. Those that we have examined after from one to three months show a smooth, well contracted cervix with no signs of inflammation or evident discharge but with considerable stenosis of the external os. The question in our minds is whether this stenosis is going to interfere in future pregnancies. J. E. Wallace(5) of Tulsa states that future parturition is not interfered with as there is no inelastic scar tissue and thinks that this method will eventually replace the Sturmsdorf operation. Moench and Schulman(6), after treating two hundred cases, report the same favorable end results.

One of the chief reasons for making every effort to clear up the chronically infected cervix is that up to the present time we have no accurate way of making a diagnosis of cancer of the cervix in its very earliest stage of development. Graves(7) expressed it thus. "Every cancer of the cervix passes through a period in its life history during which it is theoretically 100% curable." TeLinde(8) of Johns Hopkins states, "It must be admitted that with our present knowledge there is as yet no microscopic picture from the cervix which can justifiably be interpreted as a transition between the benign and the malignant." When Schiller(9) of Vienna brought to the attention of the American profession about a year ago a method for the diagnosis of cancer of the cervix at a much earlier stage than we have ever had heretofore, it sounded too good to be true. In brief, the test depends on the fact that the glycogen of the normal squamous epithelial cells takes up the iodine when applied in some form such as Lugol's solution. This gives the cells a deep mahogany brown stain, but where the cells have become atypical with atypical nuclei and have lost their glycogen they do not take any stain and appear as pearly white spots or lines sharply marked off and of two or three mm. in size. He considers this a true pre-cancer lesion. The conditions that obscure the test are: a film of mucus or blood prevents the stain, a light mahogany stain is given to the high columnar cells as found in eversions, erosions and adenocarcinoma, and these must not be confused with the distinctly non-staining areas.

Graves' conclusions after a nine months trial of this test at Harvard were that it was a specific for determining the absence of cancer and an indispensible aid in the search for early curable cancer of the cervix, and recommended the test for trial to the general profession.

Schiller states that the chief points in diagnosis, histologically, are the oblique line of demarcation between the normal epithelium and the cancer layer which is always distinct, always oblique and always proceeds so that the cancer layer is wider at the base than on the surface. The atypical and irregular cells with more and varied nuclei is the other diagnostic point. A very good review of the ideas held by various leading gynecologists and pathologists is presented in last month's *Surgery, Gynecology and Obstetrics* by Freedman(10) of Montreal. He states that, "Cancer is definitely present and can be diagnosed in the cervix from the altered cytology alone, even when there is not the slightest down-growth and the basement membrane is intact."

Our experience with two hundred cervices examined with the Lugol's test has thus far been quite disappointing. There have been about six that were at all suspicious as to staining characteristics. Some were quite definitely circumscribed dull white areas of a few millimeters in diameter. This tissue was removed with a sharp curet and examined microscopically by the pathological department, but in no instance did they find any early changes in the cells or find the sharp oblique demarcation spoken of by Schiller.

The other factor is that all cervical erosions take a light mahogany stain and so far as we have been able to check with definite carcinomatous growths of the cervix, they take the same light mahogany stain, so that it is of no value in diagnosing what we ordinarily think of as early carcinoma of the cervix.

In the near future there will no doubt be many more reports from various clinics that will aid us in appraising the real value of Schiller's Test.

SUMMARY

The use of the electro-cautery for the treatment of chronic cervicitis at the University of Nebraska Dispensary and in private practice has proven very satisfactory.

The Schiller's Lugol Test for early diagnosis of carcinoma of the cervix was studied on two hundred patients. Six non-staining lesions were examined microscopically—all with negative results for carcinoma. The practical value of this test awaits further study.

CONCLUSIONS

All multiparous women should have an intelligent cervical examination at least twice a year.

The diseased cervix is a real factor in the cancer war.

A few strokes of preventative treatment with the cautery point is worth more than many milligrams of radium inserted into a carcinomatous cervix.

Every physician cannot have a ten thousand dollars supply of radium for treating the late lesion of the cervix, cancer; but every physician can cauterize the early lesion, the infected and eroded cervix.

REFERENCES

1. Grier, M. E.: The Pathological Cervix. Nebr. S. M. J., 18-12-464. Dec., 1933.
2. Proctor, I.: Points in Prevention of Carcinoma of the Cervix. South M. & S., 94-507-1932.
3. Davis, J. E.: A Study of 1200 Cervicies. Am. J. S. 17-32-1932.
4. Hymas, M. N.: High Frequency Current in Treating the Endocervix. Arch. of Phy. Therapy, X-ray and Radium. April 1930. Medical Times N. Y., Sept., 1930.
5. Wallace, J. E.: Conization with the Electrical Scalpel. J. Okla. M. A., 25-143-April, 1932.
6. Moench, G. L., and Schulman, A.: Electro Coagulation of the Cervix. M. J. & Record, 131-130-Feb. 5, 1930.
7. Graves, Wm. P.: The Detection of the Clinically Latent Cancer of the Cervix with a Report on the Schiller Test. S. G. and O. 56-2a-317-Feb., 1933.
8. TeLinde, R. W.: Cancer-like Lesions of the Uterine Cervix. J. A. M. A., 101-16-1211.
9. Schiller, Walter: The Early Diagnosis of Carcinoma of the Cervix. S. G. and O. 52-2-210-Feb., 1933.
10. Freedman, Nathan: "Precancer" of the Cervix Uteri. S. G. and O. 58-4-717-April, 1934.

DISCUSSION

DR. I. C. MUNGER, Jr., (Lincoln): The cervices in which we are anxious to determine the presence or absence of carcinoma are the ones that refuse to take the stain anyway. So we must have recourse to biopsy, which is the outstanding factor in the end.

We have been using the electro-coagulation method on cervices for over a year. We have some that have progressed to the point where we can determine the benefit of this method. The ones we have had have been very satisfactory. It is reported by Royston and Roblee, of St. Louis, and others, that the results obtained in cervices after electro-coagulation do not interfere with pregnancy, or with parturition. They have had a number of patients who delivered children without difficulty and had no scarring of the cervix following the conization method. We know that patients with diseased cervices become a little careless about contraceptive methods. As soon as their cervices healed, they were immediately in a much more fertile state. Unless warned, they will find themselves pregnant very soon after this treatment is used.

DR. STEARNS, (closing): There is another idea of value in the Lugol test. It has been suggested that it will help us in determining the exact place to take a biopsy. In a great many cases the biopsy is done from the wrong area. This test will show an area where the biopsy when done will be of real value. I think we should not be entirely discouraged from these reports. In Schiller's report he had only twenty-five that were definitely carcinomatous from the large number examined microscopically. I think we should continue this test and I hope from future reports we can determine its true value.

REPORT OF 46 CASES OF TRICHINIASIS

ALBERT W. ANDERSON, M. D.,
West Point, Nebraska.

Trichiniasis is rated as a sporadic disease in the United States. Ransom tabulated about 320 cases in the United States during the five years, 1909 to 1914, in which there were 19 deaths or a mortality of about 6%. In his tabulation of all reported cases, about 1550 in the United States, there were 270 deaths or a mortality of 16%. However, we feel that there are probably a great many more because many of the mild cases and a number of the severe ones are often treated as a grippe, typhoid fever, or some other febrile disase without a correct diagnosis being made. Our experience has been that people are very reluctant to admit having partaken of pork which might have been infected, because they feel chagrined, in that trichiniasis to them means unsanitary conditions or careless preparation of food. They feel more or less sure that the hogs they butcher are sound because they are young and look healthy.

Our community is made up of a large percentage of people of German extraction, who are particularly fond of smoked sausage. In this community, there seems to be a lack of fear or understanding or regard for the seriousness and mortality associated with trichiniasis infection, because even after having had experiences of severe illnesses and even death in the family, these people have resumed eating improperly cooked pork and sausages containing pork. Time and again, will these same people ask us to examine pork to see if they could not be permitted to eat raw pork as they did before.

Trichiniasis is caused by a nematode known under the technical term of trichinella spiralis and is usually transmitted to the human by eating improperly cooked pork and in some countries by improperly cooked dog meat. Hogs usually become infected from eating rats, mice, or carcasses of hogs which are infested with trichina. It is most common among hogs which are raised or fattened near the premises of slaughter houses where precautions are not very vigorous in eliminating or destroying rats. Trichiniasis has also been found in the badger, fox, bear, and almost any of the domesticated animals; however, cattle, horses, and sheep are difficult to infect, though it has been done experimentally. Guinea pigs and rabbits are readily infected experimentally. The worms will develop to adults in the intestines of some birds, as the pigeon. goose, chicken, and grouse, but there is no development of the larvae in the muscles of these birds. Trichina expelled from the gastro-intestinal tract of birds, rats, or hogs have been found incapable of producing the disease.

The trichina are usually found encysted between the muscle fibers,—the cyst having a distinct capsule, which may or may not be calcified, in which the adult worms are coiled. The male measures from 1.4 to 1.6 mm. and 40 microns in diameter; the female from 2 to 3.5 mm. and 60 microns in diameter(1). These cysts are found usually in the muscles of the neck, shoulder, interosseous muscles, tongue, and close to the tendonous portion in long muscles. When this meat is eaten, the cyst wall is digested in the stomach and the worms are liberated. These then pass on into the upper part of the small intestine where they grow to maturity. Females are fertilized by the end of the third day. After about a week, fertilized females burrow through the mucosa of the intestines and the embryos are deposited into the tissues. It is believed that these embryos are taken up by the lymphatics and transmitted to the right heart by way of the thoracic duct. It is then pumped through the capillaries of the lungs, into the general circulation and then to the striated muscle. The embryo grows rapidly in the muscle, completing its growth in about two weeks when it begins to coil up and encyst. The cyst wall is distinct by the end of the sixth week and becomes complete by the end of about three months. The capsule begins to calcify in about six months and the calcification process may continue for a long time or become so complete that the parasites die. It is believed that these embryos, male and female, may live twenty to thirty years in this cyst in the human and as long as 11 years in the muscles of hogs(2).

The course of the disease produced by trichiniasis is usually divided into three stages. The first stage lasts about a week and corresponds to the development of the parasites in the intestines, which is marked chiefly by gastro-intestinal symptoms. These symptoms may appear shortly after eating the pork or may be delayed for several days. There may be vomiting, diarrhea, and general malaise with more or less temperature, though these symptoms may be entirely absent. The second stage, the symptoms of which appear nine or ten days after the infested meat is eaten, represents the time when the larvae are distributed to the muscles by the general circulation, at which time, the muscles become more or less sore. The temperature may range from 99½ to 106, depending on the severity of the disease. Usually, we have a mild edema of the face, especially of the eyelids, which is a very striking symptom at this time and should always lead one to suspect trichiniasis and be considered so until proven otherwise. There may be mild or severe pains in the muscles of the neck, chest, arms, or legs at this time. During this stage, there is a bronchitis and these patients invariably think they have an ordinary grippe or a severe cold. This mild or severe bronchitis is sometimes the misleading factor to the physician in charge, who takes it for granted and agrees with the patient. The third stage is the stage of encystment which begins about the fifth or the sixth week when the embryos are becoming encysted in the muscles. The symptoms begin to lessen, the temperature gradually returns to normal, and disturbances and soreness of muscles begin to subside. The edema of the face may still be present, however, it may disappear early or may reappear at this time.

CLINICAL DIAGNOSIS

Clinical diagnosis is usually not difficult because these patients seldom come in early—most of them consulting us because of the edema and swelling which they have noticed about their face and eyes. This edema is what scares them and usually they bring a specimen of urine with them, thinking they have some kidney trouble and fearing this edema is a forerunner of dropsy. Very often they have been at the office with a temperature of 102 to 104, stating that they have a bad cold or grippe. You see the edema on the face and eyelids and should immediately suspect trichiniasis. As a rule, a little history will reveal that they have others in the family who are also sick. Most of the time, they will admit eating pork in smoked sausage. There are a few who have firmly denied having partaken of pork for months—why, I do not know. But invariably, when a diagnosis of trichiniasis has been made, they will then admit having eaten pork or remember of having partaken of some of the neighbors' and further history reveals that this family is also sick. The next procedure we follow is of making a few blood smears, looking for an eosinophilia. We have always found the percentage of eosinophilia from 10% to 35%. This eosinophilia varies from day to day. It is usually higher in children than in adults. If a leucocyte count is made, our cases have run from 12,000 to 25,000. Most of the patients have complained of pain in the neck muscles. The more severe cases also have pain and tenderness in the trunk, arm, and leg muscles. According to Lentz, it is possible to find the larvae in the peripheral circulation and also in the spinal fluid. His technic of finding the larvae in the peripheral circulation is to withdraw 5 or 10 cc of blood and dilute it with 100 cc or 3% Acetic Acid Solution, centrifuging and examining the sediment.

We have had the patient bring in some of the sausage, which, by the way, is not very easy to examine and a negative examination does not mean that it is free from trichina, because most of the sausages are made up of one-half to two-thirds beef muscle. The parasites can more readily be found in pork muscle taken from the neck, the shoulder, the tongue, or the intercostal muscles. These pieces of muscles then can be fed to a small bird and after eight to ten hours' digestion, the bird is killed, and if the trichina are alive, they may be found in the intestinal tract(3). We have, however, used an artificial digestive formula which we obtained from the United States Department of Agriculture, Bureau of Animal Industry, Washington, D. C., which s as follows: Scale Pepsin 2.5 grams, Sodium Chloride 2 grams, Hydrochloric Acid 10 cc and Water 1000 cc. The meat is chopped up and horoughly mixed with this digestive fluid and placed in the incubator at a temperature of 37.8 C. After twenty-four hours, the meat is usually horoughly digested. A glass tube is lowered to o the bottom of the container and the sediment allowed to rise into the tube. This fluid is then centrifuged. the supernatant fluid decanted and a drop of the sediment placed on a slide over which s placed a cover glass and if trichina are present, they can readly be seen under the low power lens of a microscope. They usually appear partly curled, but without a capsule. Their bodies are clear and look like small round worms. We have found this method much more satisfactory than trying to search the muscle fibers for the ncapsulated trichina.

PROGNOSIS

According to most authorities, prognosis depends upon the amount of pork eaten and how badly the pork is infected; in other words, on the number of adult trichina that are ingested(4). This may be true in cases of experimental animals. We do not feel that this is absolutely true. In our experience, there seems to be, as in any other disease, a variation in individual resistance. We have also found that the temperature will run much lower if the patient is confined to bed and relieved of physical as well as mental exertion. Time and again, some of these patients have felt that they were imposed upon and have taken the liberty of going to the bathroom or of staying up part of the time, and immediately the temperature went higher and they had more muscle pain. Mental shock and anxiety will also cause a rise in temperature. If these patients are not kept in bed, complications, such as pneumonia, myocarditis, and nephritis are more apt to occur. Those patients who have a diarrhea when first infected are said to be less severe, in that many trichina are expelled from the gastrointestinal tract. This seems to be our experience; however, if the diarrhea continues for several weeks, as it did in two cases, they become very much dehydrated and weak. It is usually held that children do not become as sick as adults. Some of our cases in children have been mild and some have been very severe.

Complications, as pneumonia, carbuncles, abscesses, or hemorrhages add greatly to the mortality. The one patient who died, had the disease for about five weeks when an old duodenal ulcer started to bleed. This patient had had very little fever the last week and we were about ready to let him out of bed when this catastrophe occurred. His hemorrhage was quite large. He vomited considerable blood and had tarry stools. Immediately after his hemorrhage, his temperature rose to 103 to 105 and he continued to carry a high temperature. He was placed on morphine and nothing by mouth. The next day he again vomited a large quantity of blood and appeared almost exsanguinated. He was then transfused with 500 cc of blood, which was repeated the next day. The bleeding seemed to cease after the first transfusion, but his temperature continued high and he died two days later.

Resume of the cases may be seen in the following chart:

	Number of Cases	Mild Cases	Moderate Cases	Severe Cases	Deaths
Adults	30	4	17	9	1
Children	16	2	10	4	0

Mortality—2.17%.
Complications:
Duodenal Hemorrhage—One.
Deep Muscle Abscess—One.
Myocarditis and Nephritis—One.

In this series, the ages varied from 79 to 2 years. Three cases developed complications: one, a duodenal hemorrhage; one, a deep muscle abscess of the thigh, which was drained, however, we neglected to examine the pus from this for trichina, which would have been interesting. One developed definite cardiac involvement with albuminuria. Duration of symptoms varied from four weeks to three months and complete recovery, in regard to fully regaining strength, was delayed in some as long as six months.

PROPHYLAXIS

The only prophylaxis is the thorough cooking of all pork consumed. Pork bought from the packing house is no safer than pork butchered by the farmers themselves in the country. I inquired as to precautions taken in packing houses and received a letter from Armour & Co., January 9th, 1933, in which they stated that there is no inspection for trichiniasis. Their meats that are supposed to be eaten raw. such as Italian hams. dry sausage, etc., are handled by the government by placing the meat in extremely low temperature, which by the way is 5° Fahrenheit, for a period of twenty-one days, during which time the trichina become harmless. They further state that the only time that inspection for trichina was carried out was in the olden days when Germany required microscopic inspection of certain cuts of pork that went abroad. Otherwise, pork that is sold over the block is merely chilled for seventy-two hours, which does not kill trichina.

TREATMENT

If the cases are seen early, which is infrequent, cathartics and anthelmintics no doubt are of benefit. The balance of the treatment is entirely symptomatic. We insist that these patients be kept in bed, and by that we mean, that they should stay in bed and be made to use a bedpan. These patients should also be protected against mental worry and strain, because, time and again we have observed relapses because of mental or physical exertion. At least, it appeared to us that the patients who were strictly confined ran a milder course and had less complications.

In conclusion, since the cases of trichiniasis are becoming more prevalent, and due to the difficulty in educating the public to refrain from eating raw pork, we believe that we should constantly be on the lookout for trichiniasis. The diagnosis is relatively simple and we feel that if these patients are strictly kept in bed, the mortality will be lower.

BIBLIOGRAPHY

1. Tice: Practice of Medicine. Volume 5, p. 176.
2. Hutyea & Marck: Pathology and Therapeutics of the Diseases of Domestic Animals. Vol. 2, p. 889.
3. Kaup: Animal Parasites and Parasitic Diseases. P. 156.
4. Osler: Practice of Medicine. 8th Edition, p. 299.

ELECTRO-COAGULATION ON TONSILS*

L. C. KNIGHT, M. D.,
Lincoln, Nebr.

Much speculation has occurred as to the cause of diseased tonsils and many operations have been devised to remove them. As far back as medical history goes there are instances in which operations for the removal of the tonsils are mentioned, and it is indeed strange that they are about the same as used today with the exception of that which I am to briefly discuss. All of them used the knife and scissors and some of them a snare. Much hemorrhage usually resulted from the early operations and so the use of the knife was bitterly criticized. Later on the actual cautery was used as was chemical cauterization. Still later a silver wire loop was used which was drawn about the tonsil and tightened daily until after four or five days the tonsil was severed. This method was later abandoned because of the extreme pain that it caused. With the advent of asepsis there were many changes in the knives and scissors but for two hundred years they have been the instruments of choice, and still remain so, and will likely be the instruments of choice for a good many years to come.

Within the past few years there has evolved a method that is radically different from anything that has ever been tried. Like all new things it has been bitterly criticized and has still many opponents who can see no good in it. But its followers have increased and now I believe most of the men doing throat work will admit that there is at least some good in it. No small part of the antagonism that has arisen was caused, I believe, by the writings in the lay press of one of the members of our profession. This writer has taken particular pains to ridicule other medical men and their efforts and to boast about the successes that certain people have had with this electro-coagulation method. This has tended to give the method into the hands of the irregular and non-ethical and has thus made many of the ethical men shy away from it. Lately a good many prominent men have taken it up and so at this moment the method has more standing than it has previously had.

Much of the abuse heaped upon the method of electro-coagulation has been deserved, judging from the results that I have seen, but in all fairness I must say that I have seen throats that were much worse scarred as a result of surgery than those that were treated by inexpert hands by this electrical method. The chief complaint that I have heard offered is that the surface of the tonsil is so scarred that it is difficult to incise in case of subsequent infection and that the tissues below the surface of the scar were soft and mushy in nature, seeming to indicate that there was some latent infection present. I grant that this often occurred but it was due to the fault of the operator and not to the method. Many operators at the first thought that it was necessary to have a current of rather high voltage and amperage to accomplish what has later been found to be best done with a very mild current. One rather prominent exponent of this method at one time boasted to me of the power of his machine and said that the tonsil could be completely burned out at one sitting, and it could be, but the resulting pain and swelling and later scar formation would be worse than any surgical removal, and the value of the method would be lost. It was this rather unfortunate conception of the virtues of the method that brought it so much unfavorable publicity. The persistent salesman was also a factor in this for he brought to many men a story of successes in the treatment f disease by the application of this current, and hey, often little skilled in its application, were ed to try it with rather unfavorable results.

---

*Read before the Lancaster County Medical Society, March 7, 1934.

It seems to me, that to be able to do careful nd satisfactory work, there should be some nowledge of the apparatus and a rather intimate cquaintance with the tissues and their relationhips. If one is lacking in either of the foregoing nd tries to use this method there will likely be poor result, for the method is not fool-proof and s not for those that are not accustomed to its use.

Until a few years ago all of this sort of work was done with the unipolar electrode. At that ime an electrode was attached to the patient's body, and the pointed electrode held in the operator's hand which was applied to the tonsil. The current had to traverse the patient's body as well as the tonsil, and as a result a rather strong current was used and often there was considerable complaint that the passage of the current was unpleasant. Now a small double pointed needle affair is used and the current has only to pass from one point to the other of the instrument and through a small intervening bit of tissue. In this connection it might be well to state that the points do not get hot and burn tissue, but the coagulum is caused by the heat from the resistance offered by the tissues to the passage of the current.

The points are held against the tonsil or pressed into the tissue for one eighth to one quarter of an inch until a small, round, white spot forms indicating that there has been coagulation of this particular area. Then the needles are moved to another point and this treated the same way. Within a few minutes the whole surface of the tonsil is covered with these small spots which within a few days coalesce into a white mass. Within ten days or two weeks the coagulum has disappeared and the tonsil is ready for a second treatment. I have found that it takes from three to five treatments for each tonsil depending upon the amount of treatment the patient will stand. This, you will see, will consume six to ten weeks and will mean at least that many visits to the office.

If this procedure is carried out carefully and cautiously there is no reason for any patient suffering to a great extent and neither is there reason for a scarred throat or half finished tonsillectomy.

Several writers have mentioned what is called cryptectomy in which the central or crypt bearing part only is removed. This was advocated years ago by many as a surgical measure and was the forerunner of the present tonsil operation in which the tonsil is entirely removed. It is my belief that, in persons past forty-five years of age in whom there is little danger of a regrowth of tonsil tissue, there is nothing to be feared from this method.

The advantage of electro-coagulation is that there is little pain or shock and no bleeding. There are no recorded cases of lung abscess. It can be used in cases that are not able to stand a conventional operation. There is no expense for hospital care as it is essentially an office procedure. The usual occupation can be carried on. The disadvantages are that it keeps the patient with some soreness of the throat for weeks, and I have not been able to produce the perfect result that one is able to obtain with the conventional operation. It is said by some that they are able to get every vestige of the tonsillar tissue, but I have not been able to do this. I do not think, however, that any that remains has any particular clinical significance.

The indications might be listed as follows:

1. Removal of—
   a. Post operative tonsillar tags .
   b. Lingual hypertrophies.
   c. Growths and malignancies.
   d. Various fungus infections.
   e. Tonsils in conditions complicated by blood dyscrasias such as hemophilia, aenemia, etc.
2. Various general conditions in which serious involvement of the heart, lung, and kidneys is found and in the presence of advanced syphilis, arthritis and sclerotic changes.

Contraindications:

1. Not applicable in children.
2. Extremely nervous or excitable persons.
3. Where operations under local anaesthesia for any reason are contraindicated.

Some of the objections to the method that I have heard are that it cannot be done without disturbing the delicate adjoining tissues. It is said that the operator cannot tell when the tonsil is all out and that the tonsil will return within three years. Some one has said that it will cause cancer and that the slough is liable to open the carotid artery or other arteries. Other objections are that it is the old burning method of the actual cautery of years ago. The most talked of objection voiced by medical men is that it forms a scar at the site of the operation that dams up the pus and infection, and that when the scar is opened there is soft, mushy tissue found that is at least not normal for that area and may mean that it is badly infected.

The answers to the above for the most part are obvious, but it is true that there can be bad results come from this as from manipulations in the throat with the knife. If one is not familiar with the structures involved, and with the instrument he is using, he is liable to do a good deal of harm in either case. The operator can most certainly tell when the tonsil is all out if he can differentiate between tonsil and other kinds of tissue. There is no blood or any other thing to obscure the field so that if the operator knows his task there is no reason for leaving any great amount of tonsillar tissue.

My conclusions with respect to electro-coagulation are that it is a very satisfactory method for those persons over forty-five years of age, and for those that have great fear of the knife, as well as those that suffer from some constitutional disease that makes the conventional operation dangerous. Thorough knowledge of anatomy and ability to clearly remove tonsils surgically, is a very necessary factor. The majority of tonsils are better removed surgically. It is not an ideal method as it is slow and painstaking. It is difficult to destroy the entire tonsil. The scarring so much talked of is caused by errors in technique.

THE VALUE OF SEQUESTRATION ANEMIA IN SURGERY*

C. H. NEWELL, M. D.,
Omaha, Nebraska.

In this brief presentation it is my desire to call to your attention a procedure which is of great value in the prevention and the treatment of hemorrhage and which for some reason, seems not to be used as often as would seem indicated. Dr. A. P. Condon and I have made use of it in 61 cases in the past two years at the Nicholas Senn Hospital and I wish to review for you our experience with "Sequestration Anemia."

The name was given to the procedure by Horsley although it was made use of according to Baldwin as far back as the time of Hippocrates. "Sequestration Anemia" may be defined as a condition, in which an anemia is produced in certain portions of the body by holding an abnormal amount of blood in other portions. It is in fact just the opposite of auto-transfusion, wherein the blood is forced from the extremities into the large vessels of the trunk and into the head, in cases of shock or of severe hemorrhage. The earliest definite description of the use and value of sequestration anemia appeared in 1863 in the *American Medical Times*. It was offered as a substitute for phlebotomy in the treatment of bleeding incident to gunshot wounds of the lung. In 1888 Sweetman of Toronto presented an article on the subject in the *Annals of Surgery*. In 1907 Dawborn of New York, in the same publication, severely criticised the profession for neglecting this very valuable procedure. In 1933 several articles on the subject appeared, one in *Military Surgeon* by Baldwin entitled "Controlling Inoperable Hemorrhage" and one by Lillienthal of New York calling attention to the value of using sequestration anemia. He also describes it in his book on Thoracic Surgery. Baldwin in his article refers to it as the Detmold Method.

In making use of sequestration anemia one attempts to store up an abnormal amount of blood in the extremities of the patient thereby lessening the amount in the area to be or having been operated upon or in the area in which an inaccessible hemorrhage is taking place. The original articles on the method described constriction of the lower extremities by bands of rubber tubing such as are used in producing an ordinary Bier's Hyperemia. We found however, that to get the best results it is necessary to have an apparatus by means of which one may know exactly the degree of compression taking place and at the same time be able accurately to vary that degree as indicated. This we have found to be most important. Our apparatus is applied as follows: A pneumatic cuff of an ordinary sphygmomanometer, is placed about each thigh as near the torso as possible and another high up on one arm. These three are joined by means of Y connections to a common tube which continues to the head of the operating table where a bulb is attached. By this means the three extremities may be compressed simultaneously and to the degree indicated, a blood pressure indicator having been connected into the apparatus. To the other arm is attached the usual sphygmomanometer, which serves the double purpose of indicating the general blood pressure and of producing the desired sequestration in the left upper extremity. Two degrees of sequestration anemia have been described. First: That degree which produces a distinct softening of the pulse. In this condition there will be very little bleeding in operative work upon other parts of the body. Second: That degree which produces faintness in the patient, if e be conscious, in which no bleeding occurs except from very large vessels.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, May 22-24, 1934.

Dawborn recommended that the first degree be used during operations. In fact he advised not o begin the operation until the desired softening had occurred. The second degree is more often o be used in the treatment of post operative or of inaccessible hemorrhage. The sequestration hould be accomplished gradually and when re-eased should be done in the same manner. About ive minutes should elapse in reaching the desired degree of sequestration. The extremities will then be swollen slightly and very definitely cyanotic. We have obtained the most satisfactory results by carrying the pressure in the sequestration apparatus at about 3 to 5 mm higher than the general diastolic pressure. Naturally the pressure in the apparatus must be varied, with the changing general diastolic blood pressure. In an emergency such as head injury or in a case of sudden inaccessible hemorrhage, if the sequestration apparatus is not quickly available, very satisfactory results can be obtained by the use of rubber tubing to constrict the extremities. The tubing should be applied just tightly enough to produce a cyanosis in the extremities but not enough to cause the radial or the dorsalis pedis pulse to disappear.

There is much to be gained by a judicious use of this procedure of sequestration anemia. The chief causes of operative shock are: hemorrhage, anesthesia, trauma, and loss of body heat. Then one may reason that anything which will lessen the amount of bleeding incident to the operative procedure, will also be a factor in lessening the incidence of shock due to the other three causes. That is if less time is consumed in the control of bleeding, less anesthetic will be used, less trauma will occur and less loss of body heat will take place.

All of us make use of the tourniquet to lessen the amount of bleeding in extensive operations on the extremities. In sequestration anemia we have a means of controlling bleeding in any part of the body almost as well. Naturally it does not control bleeding from the large vessels as does the tourniquet. I might mention that we do use the apparatus as a tourniquet in extensive operations on the extremities. Of course it is necessary in that event to disconnect the other extremities. Surgeons have given considerable attention to the development of practical, upright or semi-upright, positions for brain operations in order to make use of gravity in the control of hemorrhage. In sequestration anemia we have a method which is much more satisfactory. Again, if shock impends during an operation and if sequestration anemia is in effect, a quick auto-transfusion of good blood may be given the patient, simply by releasing some or all of the blood impounded in the extremities. It is also said that this blood released into the general circulation contains very little anesthetic and has a tendency definitely to shorten the period of post operative anesthesia in cases in which general anesthesia has been used.

The operations in which we think this method is of greatest value are those done upon the thyroid, the breast, the head, the spine, or the prostate. Our operating time in amputations of the breast has been reduced at least 30% since adopting the method. I recently did a radical breast amputation and found it necessary to tie only three vessels except of course the main branches of the axillary vein. In the treatment of head injury it is of value in lessening intracranial pressure, first, by lessening the actual amount of blood within the cranial cavity and secondly, by lessening the diastolic blood pressure. Its use in head surgery has the added advantage of increasing the depth of the epidural space within the skull. In prostatectomy it is of great value in two ways, it lessens the hemorrhage at the time of operation and offers a splendid means of controlling the post-operative bleeding, which is often so annoying after removal of the prostate. Laminectomy is also done much more quickly and more easily if sequestration anemia is used.

At the present time we have in the hospital a patient, in the post-operative treatment of whom sequestration anemia was used with most satisfactory results. He had been jaundiced three pluses, on a scale of four, for nearly three weeks, due to common duct obstruction. The usual safe-guards were used and the operation was done with very little bleeding. On the fourth post-operative day a very annoying oozing of blood appeared. It came both from the deep wound and from the wound in the abdominal wall. This was promptly controlled by inaugurating sequestration anemia. A few hours after the sequestration was discontinued the oozing again appeared. The apparatus for producing sequestration was left in situ and the nurse was instructed to inflate the bags whenever oozing appeared and to maintain proper pressure for one hour. It was necessary to make use of it at irregular intervals during the succeeding five days. The method is of course to be used in any case of post-operative bleeding and is especially valuable in the bleeding following tonsillectomy. It also suggests itself at once in the effort to control inoperable or inaccessible bleeding, such as pulmonary hemorrhage, gastric or duodenal hemorrhage or even the bleeding of typhoid. However, there may be contra-indications to its use in the last named lesion. This will be discussed later.

Now as to just how this sequestration of blood lessens the tendency to bleed from vessels in the anemic area, there seems to be some difference of opinion. Lillienthal thinks it to be due to a fall in blood pressure in the anemic area. It is well established however, that a large amount of blood may be lost from the body without drop in blood pressure. McLeod says that one-eighth of the volume may be lost with no blood pressure change. It may be due to a lessening in the calibre of the vessels which must take place if the normal systolic blood pressure is maintained in spite of the lessened amount of blood or to a lessening of the actual amount of blood in the anemic area. These latter explanations seem to us, in view of recent experience, to be the more logical. At first we were inclined to disagree with Lillienthal that there was a drop in blood pressure during sequestration. However, since being enabled to make more accurate observations of the blood pressure changes, we find that there is usually a definite drop in the diastolic pressure, although there is always an increase in the systolic pressure, such as one finds during most operations. In a series of normal persons on whom the sequestration anemia was produced, and to whom no anesthetic was given and upon whom no operation was done, the systolic pressure remained about normal or perhaps a few m. m. lower than normal for the individual but the diastolic pressure dropped markedly. The same variation in pulse pressure due to the varying diastolic pressure was found. Before this drop in diastolic pressure occurs a difference in pulse volume is to be recognized and the freedom from bleeding is just as great as it is after the drop occurs. So it would seem that something other than drop in blood pressure is to be found as the factor in this lessening of bleeding. Following the drop of the diastolic pressure which is not great until after about ten minutes, it fluctuates, sometimes rising for a period and again dropping, the greatest variation however, occurs in the pulse pressure. The systolic pressure remains normal or higher. In our earlier cases we were inclined to delegate the application and the observation of this procedure to the anesthetist, but this sometimes startling variation in the pulse pressure and the fact that the pressure to produce sequestration should vary with the diastolic pressure, we now delegate one person to be responsible only for the sequestration during the operation. There is much to be learned as yet abou the blood pressure in these cases.

If I have seemed too optimistic about the use of sequestration anemia, may I say now that it is not to be recommended as routine in all operations. One must realize that with such pulse pressure fluctuation during its use, it may be attended with some danger. However, none of the men writing about it, have reported any untoward results. With one possible exception which I will mention later, we have seen no ill effects from its use.

The first adverse criticism of this procedure usually offered is that the post-operative bleeding will be more marked after the removal of the sequestration. We have found this not to be a just criticism. Of course the sequestration is discontinued before the wound is closed so that if additional bleeding occurs it can be controlled, but it rarely does occur. Another is that it is unwise to produce a stagnation or slowing of the blood during a period long enough for an extensive operation. I believe this is not a contra-indication to its use. Senn has shown that complete tourniquet action for six hours is not followed by serious difficulty. Moreover, if one fears this, the sequestration may be released at intervals during the operation and quickly re-established. The possibility of this being necessary is another reason for using an apparatus by means of which one can effect a quick and an accurate change in the degree of sequestration.

Naturally one should refrain from using sequestration anemia in patients in whom there are definite changes in the blood or in the blood vessel walls. Purpura is a definite contra-indication and high grade arteriosclerosis, in view of the slowing of the blood during sequestration, should probably be considered the same. In typhoid fever there is said to be an increase in the actual amount of calcium salts in the blood. This might be considered as a contra-indication to its use as being likely to produce thrombosis. However, were I confronted with the necessity of controlling a severe hemorrhage in typhoid I should use sequestration as being much the lesser of the two evils. Recent general sepsis in the body is also to be considered a contra-indication.

The one distressing result above referred to, occurred about one month ago in a patient operated for hypertoxic goitre. The operation was simple and required about twenty minutes for its completion. The patient was a female forty-five years of age but was only a fair operative risk. She had been held over and treated for about ten days before being operated upon. The morning following her operation she complained of inability to use her left arm. On examination she was found to have a complete paralysis of the left upper extremity. She developed a gradually increasing fever and died on the eighth day following. It is most unfortunate that we do not know whether or not this was a result of the sequestration. Autopsy was refused. We had an exactly similar death about ten years ago following a gallbladder operation in which sequestration had not been used. We have found no difference in the effect of or results from, sequestration used during the various types of anesthesia. We have not used sequestration during operations under spinal anesthesia. We have used very little spinal anesthetic in the past two years and in those few cases, the sequestration was not indicated.

Our conclusions as to the value of sequestration anemia in surgery are:

First: It is of definite value in controlling hemorrhage at time of operation.

Second: It is of definite value in controlling postoperative or inaccessible bleeding.

Third: It is of definite value in shortening the time of operation and in lessening surgical shock.

Fourth: It is not entirely without danger and should be used only when definitely indicated.

Fifth: In severe operations its value far outweighs its danger and its use may be just the difference between the patient getting well and failing to do so.

DISCUSSION

DR. V. V. SMRHA, (Milligan): Would it be a justifiable procedure in hemorrhage of the brain?

DR. NEWELL, (closing): Yes, its use is indicated in hemorrhage of the brain. While it will not of course stop bleeding from a large vessel, it will help a great deal. For the hemorrhage from the smaller intracranial vessels its use will, I should say, control it in most instances. This latter type occurs so frequently following head injuries and sequestration should be used as a routine in such patients.

DR. LEONARD A. SWANSON, (Hastings): I have had some good luck with commercial buttermilk in some of these cases. I should like to ask Dr. Dow of his experience?

THE CHOICE OF OPERATION IN BILIARY TRACT DISEASE

HARRY H. EVERETT, M. D., and ROY H. WHITHAM, M. D.

When considering operations on the biliary tract one usually thinks of three procedures which are commonly employed, viz., cholecystectomy, cholecystotomy, and choledochotomy. One of these standard procedures will usually be found to be the operation of choice, as our statistics will indicate. However, we wish to call special attention to the various anastamosing operations for establishment of an internal biliary fistula. We have employed these operations more frequently than is common practice with a consequent relative reduction in the number of operations on the common bile duct with in-dwelling tube and of cholecystotomies. We have felt that it is often simpler and safer to short-circuit the common duct than to open and explore it, and that it is more satisfactory to create an internal biliary fistula, particularly when it is possible that the external fistula will be permanent or persistent.

From January 1st, 1932 to May 1st. 1934, we operated upon 80 cases of biliary tract disease. The operations performed were as follows:

Cholecystectomy	55
Cholecystectomy and gastroenterostomy	1
Cholecystectomy and choledochotomy	2
Cholecystotomy	7
Choledochotomy	3
Anastamosing operations	12
Total	80

The operation is chosen according to the pathology, and the apparent operative risk in general.

CHRONIC CHOLECYSTITIS—WITH OR WITHOUT STONE

In this group we prefer cholecystectomy. Occasionally if the risk seems great a cholecystotomy is done, or the gallbladder anastamosed to the stomach or duodenum. The constant drainage afforded by the anastamosis may prevent recurrence of the disease, which is the objection to simple external drainage.

ACUTE CHOLECYSTITIS—WITH OR WITHOUT STONE

Here cholecystectomy is preferred if the risk will warrant it; cholecystotomy if the process is especially acute; and in case of gangrene or perforation partial resection of the gallbladder with internal or external drainage. We try to allow these cases to subside before the surgical attack is made, but occasionally progressively alarming symptoms have led us to operate with the process in its acute stage.

OBSTRUCTION OF THE COMMON BILE DUCT

If the obstruction be due to stone, choledochotomy with removal of the stone is preferred; if due to cancer an anastamosing operation is performed if possible, and if due to stenosis an anastamosis is the operation of choice. These cases have in our experience come to operation often in very grave condition, so that extensive operations are very poorly tolerated. Even in the presence of common-duct stone, or an elusive stone which cannot be removed within a reasonable time, an anastamosis between the biliary tracts and the stomach or duodenum, may offer more chance of recovery than an attempt to remove the stone because of the greater simplicity of the procedure. In any attempt to relieve common duct obstruction by anastamosis the portion of the bile tract chosen must have free communication with the liver ducts if success is to be expected. That these cases are often desperate is borne out by the fact that while only thirteen of our cases were of this type, five deaths occurred among them.

The operations performed and the conditions for which they were done are tabulated in Table I. Table II shows the mortality.

GALLBLADDER OPERATIONS—TABLE I

	Cholecystectomy	Cholecystotomy	Choledochotomy	Cholecystectomy and Post. Gast. Ent.	Cholecystectomy and Choledochotomy	Cholecystoduodenostomy	Cholecystogastrostomy	Choledochogastrostomy	Choledocho-duodenostomy	Cholecystogas-trotomy and P. G. E.	Total
Chronic Cholecystitis with stone	28	3			1	2					34
Chronic Cholecystitis without stone	19	1		1						1	22
Acute Cholecystitis with stone	5	2									7
Acute Cholecystitis without stone	3	1									4
Common Duct Obstruction—stone			2		1	2	1		1		7
Common Duct Obstruction—stenosis			1			1	1	1			4
Common Duct Obstruction—malignancy									2		2
Total	55	7	3	1	2	5	2	1	3	1	80

GALLBLADDER MORTALITY—TABLE II

	Cholecystectomy	Cholecystotomy	Choledochotomy	Cholecystectomy and Post. Gast. Ent.	Cholecystectomy and Choledochotomy	Cholecystoduodenostomy	Cholecystogastrostomy	Choledochogastrostomy	Choledocho-duodenostomy	Cholecystogas-trotomy and P. G. E.	Total
Chronic Cholecystitis with stone	0	0			0	0					0
Chronic Cholecystitis without stone	0	0		0						1	1
Acute Cholecystitis with stone	2	1									3
Acute Cholecystitis without stone	0	0									0
Common Duct Obstruction—stone			0		1	0	1		1		3
Common Duct Obstruction—stenosis			0			0	1	1			2
Common Duct Obstruction—malignancy									0		0
Total	2	1			1		2	1	1	1	9

One of the striking observations to be made from a comparison of these tables is that there were 47 cases of chronic cholecystitis in which cholecystectomy was performed without mortality, and only one death occurred in the 56 cases of chronic cholecystitis. That case was complicated by a concurrent duodenal obstruction for which a gastroenterostomy was performed in addition to cholecystoduodenostomy. All deaths in this series occurred in complicated or acute cases. There were 5 deaths following 12 anastamosing operations, an extreme high mortality which would apparently not recommend the procedure. However, a survey of these cases shows that they were desperate and we believe that more lives were saved than could have been with any other operation. Some of these cases were attacked in the face of unfavorable liver function tests, at a time when we did not appreciate their significance. Operation would now be delayed or even avoided under such circumstances, and a surgical mortality possibly avoided. We expect to record our experience with these tests in another paper.

Our technique for cholecystectomy and cholecystotomy does not differ materially from that usually employed. If the gallbladder is distended we do not hesitate to open it and evacuate the contents in order to make its removal easier. Sometimes after doing this we may split the gallbladder longitudinally to the ampulla in order to bring into view the ampulla and cystic duct region.

The anastamosing operations require a certain amount of resourcefulness. The site chosen for the anastamosis both in the biliary tract and in the stomach or duodenum must depend upon the conditions existing in the individual case. It must be possible to bring the parts together without tension, and without serious kinking. The stomach may be used as freely as the duodenum because the passage of bile into the stomach seems to be devoid of ill effects. No tubes or clamps are necessary and the two stomata are brought together with one or two layers of suture just as in any intestinal anastamosis.

Construction of an internal fistula around a tube of foreign material is too often followed by contracture and stenosis, and is to be avoided.

A drainage tube is usually left at the operative site.

SUMMARY AND CONCLUSIONS

1. Anastamosing operations between the bili-ry and gastrointestinal tracts may at times be ationally employed in any type of surgical biliary act disease.

2. Anastamosing operations are relatively sim-le to perform and may often be substituteed for iore formidable procedures.

3. An anastamosis is often more desirable than xternal drainage because it is more comfortable, more permanent, and more physiological.

4. In a series of 80 cases of biliary tract disease. cholecystectomy was performed in 47 cases of chronic cholecystitis without a death.

5. Of the nine deaths in the series three occurred in acute cases, and six in otherwise complicated cases.

6. The optimum time for operation on the biliary tract is in the chronic state before serious complications have arisen.

CLINICAL PATHOLOGICAL CASE REPORTS—IV*

FLOYD L. ROGERS, M. D., and J. MARSHALL NEELY, M. D.,
Lincoln, Nebraska.

The case presented is one of granulocytopenia granulocytosis or malignant neutropenia. This ondition is of particular importance from the tandpoint of etiology and treatment. The con-ition has been recognized much more frequently ı recent years. It is unlikely that a condition vith such striking features has in the past gone inrecognized. There are numerous and con-incing reports in the recent literature showing relationship between the taking of amidopyrine nd granulocytopenia. In the case presented there s no history of the use of this drug.

Treatment has been unsatisfactory. It was ioped that pentnucleotide would prove to be ı specific, but it has fallen far short of the mark. requent blood transfusions seem to be helpful. requent evaluation of the white blood cells dur-ng the administration of amidopyrine may lead o the early recognition of some cases caused by his drug, and its withdrawal result in easy re-overy.

S. H., white, female, single, age 54. Was admitted o the hospital on March 12, 1933. She had been in ;ood health until one week before admission at which ime she developed a sore throat. She was treated by ı chiropractor on the two days before admission to he hospital. The soreness of the throat had become rogressively more marked.

Examination revealed a woman acutely ill. Tem-erature 102.4, pulse 100, respiration 24, blood pres-sure 120/80. The entire throat was markedly swollen ınd red. In the region of the left tonsil there was a ather large gangrenous area. There was no enlarge-nent of the cervical lymph glands. Examination of he heart and lungs revealed no abnormal findings. The spleen was easily palpable. RBC, 3,710,000; WBC, 600 all of which were lymphocytes. The plate-ets, RBC and lymphocytes were normal.

Treatment consisted of transfusions every twelve hours of 500 cc. whole blood. Sixteen hours after admission the larynx had become so swollen as to make breathing very difficult, and marked cyanosis had developed. A trachotomy was performed. The patient's condition improved for a few hours after which she became rapidly worse and died.

PATHOLOGY

The following significant changes were found at autopsy: The mucous membrane of the trachea and epiglotis were enormously thickened and there was hemorrhagic infiltration in the upper portion of the wall of the trachea, and to a much less degree in the upper portion of the esophagus. The posterior pharynx showed hemorrhagic infiltration and ulceration of the mucosa. The bone marrow removed from the rib and mid-portion of the femur showed a marked degree of hyperplasia. The only other finding of any importance was congestion of the posterior portion of the lungs.

Sections of the ulcerated pharynx shows large areas of necrosis and a dense infiltration of mononuclear cells. The striking feature of this section is the lack of granulocytic elements. The predominating cell of the monouclear series is the lymphocyte, although there are a considerable number of plasma cells present. There is considerable hemorrhagic infiltration seen throughout this tissue.

The bone marrow is hyperplastic. The megakaryocytes and reticular cells are normal in appearance. No normal appearing granulocytic cells are found. There is a marked degree of erythroblastic hyperplasia and there are a large number of cells present which, as far as the nuclear characteristics are concerned are identical with myelocytes but which show no granules in the faintly staining cytoplasm. It is possible that these cells represent myelocytes which have, for some reason, lost the characteristic granules. granules.

The findings described here correspond roughly with about 50% of the cases reported, so far as the pathology is concerned. The remaining 50% of cases show an aplastic, rather than hyperplastic bone marrow. There is, then, no typical pathology for the clinical entity known as malignant neutropenia, some cases showing hyperplastic and some aplastic bone marrow. The only constant feature of these cases is the absence, or diminution of the identifiable granulocytic series and it is very possible that many of the cells are difficult to identify due to the fact that there has been destruction of the cytoplasmic granules.

"Some people are like taxi drivers—they go through life just missing everything."

---

*From the Pathological Laboratory of the Lancaster County Hospitals.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor..........Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman..........Madison
A. F. Tyler..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex Officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. 19 October No. 10

STATE EMERGENCY RELIEF FOR MEDICAL SERVICE TO INDIGENT

A working arrangement of the Federal Relief Representative and State Relief Administrator has been given approval by the Public Welfare and Legislative Committee of the Nebraska State Medical Association and has been promulgated.

It is left to the individual physician to accept or reject service and terms offered. This seems probably the best solution possible of a vexing problem.

It should be remembered that the State Emergency Relief Administration does not attempt to determine what are adequate fees for medical service, but simply determines the amount it can pay for such service under allotments of relief funds which it has available from Federal or other sources.

Sixty-nine counties in Nebraska have agreed to contribute to the cost of relief in those counties.

Literature sent to all physicians in Nebraska by the State Relief Administration covers the matter. The salient points are given below:

PROCEDURE

Whenever medical care is required for persons on relief, either in the home of the patient or in a physician's office, the county relief worker will make out an order on such physician as the relief client selects. The selection will be confined to physicians who have indicated their acceptance of the procedure and fees and who are available within a reasonable distance from the patient. Wherever the relief client indicates no preference for any physician, the relief worker will make out orders for physicians within a reasonable distance from the patient in such way as to distribute such relief work as evenly as possible.

When medical care is completed, the physician will return the order for medical care with his report of service rendered on the reverse side of the order. Where mileage is claimed, he will indicate the number of miles and the amount claimed against the date on which the visit was made. These returned orders will constitute the physicain's bill for his services. These bills will then be audited and paid either from county funds or from State Emergency Relief Administration funds under agreements between the counties and the State Emergency Relief Administration.

The Nebraska State Medical Association is appointing one or more physicians in each county to act as advisors to the relief workers to help determine the extent of medical care required by relief cases.

FEES

1. The basis of fees is to be fifty per cent of the usual charges for home and office visits in the county where the work is done. If there is any doubt as to what the usual fees are in a given county, the relief worker shall make his recommendation to the State Director of the Relief Division who, with the advice of representatives of the Nebraska State Medical Association, will determine what is the usual fee charged in the county in question.

2. Cost of drugs shall be included in the fee agreed upon in places where it is usual for the physician to furnish medicine. In other places the relief worker is authorized to enter into arrangements with drug stores for medicines at uniformly reduced prices.

3. Total fees for an acute illness shall not be more than enough to pay for a maximum of ten visits in two weeks, and for a chronic illness, one visit a week for three months.

4. Relief funds received from the Federal Emergency Relief Administration cannot be used for hospital care. County funds can be used for this purpose. For minor surgery performed in the home or in the doctor's office, fees will be fifty per cent of the usual rate and a maximum of $10.00 shall not be exceeded.

5. Obstetrical care. The maximum fee, including pre natal and post natal care shall be determined on the basis of fifty per cent of the usual fee in the county concerned, but in no case shall it exceed $15.00.

6. For all authorized visits outside village, town or city, the doctor shall be allowed mileage at the rate of 12½c per mile each way, with no mileage inside the village, town or city.

MEMORANDUM FROM THE PUBLIC WELFARE AND LEGISLATIVE COMMITTEE OF THE NEBRASKA STATE MEDICAL ASSOCIATION

On the evening of August 1 at the University Club of Lincoln, Nebraska, there was a meeting of the Public Welfare and Legislative Committee of the Nebraska State Medical Association, together with our President, Dr. Bixby, our President-elect, Dr. Selby, our Secretary, Dr. R. B. Adams, Dr. K. S. J. Hohlen, Chairman of our Campaign Committee and Drs. Pierson and Hunt, Dentists of Lincoln, Dr. Pierson being Secretary of the Nebraska State Dental Assotion, with Mr. Rowland Haynes, Federal Repre-ntative. State Administrator for FERA in Nebras-

Sixty-nine counties have accepted relief and it was ianimously voted that the question of service by the edical profession in this relief work should be a atter of decision by each individual physician. With is in view, Mr. Haynes will address to each regis-red physician in the State of Nebraska, a letter ating the rules of the FERA, the fees to be allowed, id asking a reply as to whether or not the physician ceiving the letter is willing to act for the FERA id the people during this time of emergency.

Mr. Haynes stated that while the State Emergency lief Administration is vested with the responsibil-y of expenditure of all relief funds, including those ent for medical care, and hence must control such cpenditures, it is his desire and that of the entire ate Emergency Relief Administration to cooperate ith the medical profession to the fullest extent in veloping and following policies which shall be of ie greatest benefit to those on relief and to the ork of the medical profession.

Your Committee have considered this as judicially s possible, believe that this is the wisest action to ke and that it will in no sense, carried out in this anner, be any move toward state medicine.

Where a county physician is employed, the Medical ssociation will be asked to advise fairly what mount of work he should do and what should be rned over to other physicians, the patient having choice of physician. Where there is no county hysician, the profession will be asked to assume the are of the needy upon the basis above mentioned.

We trust this will meet with your approval and ssure you that the Committee on Public Welfare nd Legislation has very deeply at heart the welfare f the people as well as the present and future of ie medical profession.

Sincerely and fraternally,
(Signed) Benj. F. Bailey,
Chairman Public Welfare and
Legislative Comittee
Nebraska State Medical Association.

MEDICAL EDUCATION IN THE UNITED STATES

The annual presentation of educational data or 1933-1934 by the Council on Medical Edu-ation and Hospitals reveals 161,361 physicians n the United States. Of this number 6,866 re listed as not in practice. There has been a et gain of physicians since 1931 of 4,955.

Classed as specialists are 50,333 or 32.6 per ent of which number 8,854 are surgeons. Twen-y-four specialties are listed. Undergraduate stu-lents for 1933-1934 were 22,799, an increase over he previous year of 333. Graduates in the spring f 1934 numbered 5,038, an increase over the revious year of 143.

Physicians listed in the Nebraska section of he A. M. A. Directory 13th edition, 1934, num-er 1772, a decrease of 13 under the number list-d in the 12th edition, 1931.

The House of Delegates of the American Medical Association at the 1934 session accorded recognition to special examining boards that conform to the standards formulated by the Council on Medical Education and urged that the Board of Trustees of the American Medical Association use the machinery of the Association, including the A. M. A. Directory, in furthering the work of the examining boards. Essentials for Examining Boards in Specialties approved by the House of Delegates urge that a special board should:

(a) Determine whether candidates have received adequate preparation as defined by the board.

(b) Provide a comprehensive test of the ability and fitness of such candidates.

(c) Certify to the competence of those physicians who have satisfied the requirements of the board.

All this denotes progress. Under the laws of the several states the licensing of physicians belongs to the police powers of the several states and no national law can cover the matter.

Some years ago the National Examining Board was established, without legal sanction, without power to compel examination, without power to enforce its certifications. This Board's power rests wholly on high standards of scholarship for its recognition. Gradually, certification by the National Examining Board has been accepted by a number of state licensing boards without further examination as evidence of fitness to practice medicine. The power of publicity has won where laws cannot reach.

Examining boards for specialties have undertaken to purge the specialties by examination and certification of those applying for the tests.

The movement has now received the recognition of the American Medical Association and we may confidently look forward to no distant day when all the specialties will be certified by the standard of fitness of the candidate to declare himself a specialist—not, as now, by mere assertion.

PRESENT STATUS OF THE SERUM TREATMENT OF POLIOMYELITIS

The evaluation of statistics in the results of treatment of this disease is very difficult. The frequency of the abortive type of the disease, the peculiar variation of the severity of epidemics which have occurred, and the natural tendency of the human body toward recovery, even in an illness as severe as polio, all make for confusion when evaluating treatment.

Regarding the use of human convalescent serum in the treatment, it can be said that the profession in America is not united as to its value as a therapeutic agent. Competent observers have maintained that it is of no benefit, even in the pre-paralytic and post paralytic stages. Its use finally becomes a matter of individual human judgment and experience. Generally speaking it may be said that its administration does no harm, that numerous rather spectacular recoveries have been reported, and that up to the present time it is probably the best remedy we have to offer.

If one were inclined to be impressed by statistics, it would seem that Rosenow's serum possesses more therapeutic value than human convalescent serum. The fact that no other competent observer has come forward to confirm Rosenow's ple-morphic streptococcus as the cause of polio, adds to the confusion regarding statistics. One can not however, disregard the numerous reports of recovery from paralysis after the use of Rosenow's serum in the post paralytic stage. Generally it is conceded that human convalescent serum is of no benefit in the post paralytic stage. Many apparently authentic instances are recorded of the recovery of paralyzed limbs after the use of Rosenow's serum.

Newspapers and periodicals have recently given some attention to experiments now under way in New York and Philadelphia looking toward the development of a vaccine against poliomyelitis. As early as 1910, work of this type was undertaken by Flexner, Lewis, and others. Numerous other observers, working in the laboratories of the department of health in New York City, have endeavored to develop a vaccine, but with indifferent success. According to a recent editorial in the *Journal of the A. M. A.*, Dr. Maurice Brodie, working in these laboratories, has, with the help of others, finally succeeded in producing a vaccine which, when injected into monkeys, made them resistant to the disease. Experiments are now being carefully undertaken to determine whether this vaccine will produce a like effect in human beings. Newspapers report that Dr. John A. Kolmer, working in Philadelphia, has also succeeded in developing a vaccine with similar properties. Very meager reports of this work are available in the medical literature at this time. Probably the experimental work is not as yet complete. One can readily admire the valient attempt to find a vaccine and register great hope for its success. Isn't it a Herculean task to perfect a vaccine before the specific cause of the disease has been found?

Hopeful reports are now available regarding the recent California epidemic. The incidence of the prevalence of the disease is abating. The greatest number of cases reported in a year has occurred in this epidemic. Most cases have been mild and the fatality rate low. Trained observers from the Rockefeller Institute, The Hooper Foundation of Medical Research in San Francisco, and Senior Surgeon Leake of the U. S. Public Health Service, have been assisting local California authorities in studying the disease. No doubt interesting data will be forthcoming.

Looking backward one can not fail to be impressed by the progress made in our knowledge of this disease. How meager was our information only ten years ago! Remarkable progress has been made concerning symptoms, value of lumbar puncture, treatment of the acute disease, as well as rehabilitation of paralyzed muscles.

Looking forward much yet remains to be accomplished. Very little is known as to the source of the disease, nor why it occurs epidemically in the summer months. We are as yet unable to determine individual susceptibility as in diphtheria and scarlet fever. Until the specific cause can be isolated, efforts to conquer the disease will be greatly handicapped.

—Floyd Clarke, Omaha.

A PLAN TO EVALUATE INDEPENDENTLY SEROLOGIC PROCEDURE FOR THE DIAGNOSIS OF SYPHILIS IN THE UNITED STATES

Since the serologic conferences at Copenhagen and Montevideo, there has been an increased interest in the relative value of serologic tests for the diagnosis of syphilis. At these conferences the test of only one serologist of the United States was presented for consideration. There are a number of excellent serologists in this country, many of whom have described original modifications of the complement-fixation and precipitation tests for syphilis. It is felt that the tests of these workers merit consideration.

The United States Public Health Service is cooperating with the American Society of Clinical Pathologists in the drafting of a plan to evaluate independently serologic procedure for the diagnosis of syphilis in this country. Briefly, the plan contemplates the collection of specimens of blood from at least 1,000 individuals and the distribution of comparable specimens to the laboratories of serologists who have described an original modification of a complement-fixation or precipitation test for the diagnosis of syphilis.

e donors of the specimens will be carefully lected so as to measure both the specificity and nsitivity of the serologic procedure. The sendg of specimens to workers at considerable disnce from the point of collection will be expeted by the use of the most modern transportion facilities, while the delivery of specimens nearby serologists will be delayed so as to make e delivery time approximately that for those rkers at the more remote points.

A committee of five members consisting of two ecialists in the field of clinical syphilology, two embers of the American Society of Clinical athologists, and one officer of the United States ublic Health Service will organize the plan of udy and, after all laboratory reports have been bmitted by participating serologists, will interet the results on the basis of clinical findings. he collection of the specimens will begin about ecember 1, 1934, and a number of serologists ill be invited to take part in the evaluation heme.

It is possible that the name of some serologist ho has described an original modification of a st for syphilis may have been inadvertently nitted. Any serologist desiring to participate ill be extended an invitation upon presentation suitable proof as to the originality of his modication of a serologic test. A brief description the plan will also be sent to those workers who ay be interested.

Correspondence should be addressed to the urgeon General, United States Public Health ervice, Washington, D. C.

OME EARLY MEDICAL HISTORY OF A PRAIRIE STATE

Selections From

"A PRAIRIE DOCTOR OF THE EIGHTIES"*

The earliest recorded history of medical activies in the Iowa-Nebraska section of the Missouri alley relates to the Lewis and Clarke expedion in 1804. These references are few and scant detail, as indeed are all references of a medical ature during the period of exploration and early ettlement.

We read that the Lewis and Clarke expedition arted from St. Louis with a keel boat fifty-five eet long, with sails and twenty-two oars, and vo pirogues with six oars each. By the time e site of the present city of Omaha was reached, e men were troubled with boils and occasionally with dysentery. The boils were large tumors which broke out under the arms, on the legs, and generally on parts exposed to action, which sometimes became too painful to permit the men to work. After remaining some days they disappeared without any assistance except a poultice of the bark of elm or Indian meal. This disorder which was ascribed to the muddiness of the river water did not affect the general health of the party for the Journals say "Party has been much healthier on the voyage than parties in any other Situation."

When the expedition reached the vicinity of the present Sioux City, Sergeant Charles Floyd "was taken very bad all at once with a Biliose Chorock" and all care and attention was ineffectual to relieve him. He died on the twentieth of August, the first United States soldier to lose his life west of the Mississippi River.

"We buried him on the top of the bluff ¼ mile below a Small river to which we gave his name, he was buried with the honors of war much lamented, a Seeder post with the Name, Sergt. C. Floyd died here 20th of August 1804 was fixed at the head of his grave."

The Floyd monument, an imposing shaft on a high point on the southern outskirts of Sioux City now commemorates his sacrifice. One may hazard the guess that his death was due to a fulminating attack of appendicitis. Certainly, modern medicine recognizes no such fatal disease as bilious colic.

In September, 1819, fifteen years after the death of Sergeant Floyd, the Sixth Infantry, accompanied by two companies of sharpshooters, came up the Missouri River on the first steamboat ever to navigate the stream. They established Camp Missouri, later to be transformed into Fort Atkinson, named after the commanding officer, at or near where now is the village of Fort Calhoun, Nebraska. The troops established an out-post for the forthcoming Major Long expedition of 1820 to explore the valley of the Platte River and to discover its source. It is stated that the establishment of this post had the further object of watching the British, who, in spite of the treaty following the War of 1812, were supposed to be actively promoting discontent among the Prairie Indians.

The troops had suffered from dysentery on the journey up the river, and were weakened from the long voyage. Because of the lateness of the season, building operations on the fort were rushed. Because of weakness, unsuitable food and the dampness of the river bottoms many developed respiratory diseases, and some died. Food supplies during the winter were limited to salt meats, flour, Indian corn meal and other, non-vitamine bearing foods. Wild game, which was plentiful on the arrival of the troops, soon became unbelievably scarce and practically unobtainable, due to persistent hunting of both troops and Indians. Scurvy broke out in the winter. Of the 788 soldiers then in camp, 560 contracted scury and 157 died. In early spring wild vegetables, of which the wild onion (Allium) the size of a hazelnut, is said to have been one, were obtainable. There is folk-lore to the effect that an Indian chieftain told the commandant of the anti-scorbutic virtues of the wild onion. A herd of cattle to furnish fresh meat, milk and butter was driven in from Fort Osage to the south, early in April, 1820. These provided the needed vitamines, and scurvy disappeared.

---

*A manuscript by F. A. Long, Editor, Nebraska State Medical Journal, aiting publication.

Accompanying the regiment were Surgeon John (or Marion) Gale and Surgeon Thomas W. Mowrer. The reports of surgeons Gale and Mowrer on the epidemic are well written and show a keen grasp of the desperate conditions that confronted them.

That scurvy is wholly a deficiency disease was not recognized at that time. To safeguard the health of the troops, various orders were issued by the commanding officer, forbidding soldiers to sleep in the open air, and requiring them to wear coats or some other covering at reveille and tatoo. Seventy men were sent to Fort Osage to relieve the congestion at Fort Atkinson. In April a hospital camp was established about three miles from the fort. It appears that those in authority must have had in mind a possible danger of contagion.

Surgeon Gale furnishes us with a bit of social history of great interest which must here find place. He became enamoured of the Indian princess Ni-Ku-Mi (or Ne-Co-Mi) daughter of the chief of the Ioways, married her and she bore him a daughter who was named Mary. After several years, so the story runs, Surgeon Gale left the fort for other service and wanted to abandon his squaw-wife, but wished to take his daughter, Mary, with him. Ni-Ku-Mi, with the child, took to the woods along the Missouri where she remained in hiding until Surgeon Gale had taken the steamboat down river. He was transferred to Jefferson Barracks, later served at Fort Leavenworth and died at Fort Armstrong (Rock Island, Ill.) July 27, 1830. His record as an army surgeon is of the very best.

Mary grew to womanhood and married Josep La Flesche, half-breed chief of the Omahas. T this union was born a large family of childre of whom two daughters and son became famou The younger daughter, Susan La Flesche wa educated in the East, attended the Woman's Mec ical College, Philadelphia, and was graduate with honors, one of the very few Indian wome ever to have been graduated from a medic school.

Susan La Flesche became tribal physician fc the Omaha Indians, then about 1,300 in numbe married a French-Sioux Indian named Henr Picotte, interested herself in the social and phys cal welfare of her tribe, and became their recognized leader. She succeeded in raising money t build a hospital for her people at Walthill, Nc braska, which was named after her the "Susan L Flesche Hospital." She became interested in, an allied with The Nebraska State Medical Association. She died in her late forties, September 1 1915.

BILATERAL CORONARY OCCLUSIO WITH MITRAL STENOSIS: CONSIDERATION OF COMPENSATORY CIRCULATORY FACTORS IN THE HEART

Solomn R. Slater and Daniel Kornblum Brooklyn (*Journal A. M. A.*, Jan. 6, 1934), report a case of both mitral stenosis and an occlusion of all the main coronary arteries. The pathologic changes indicated that there had been fo several years a progressive arteiosclerotic narrowing of the vessels and a series of thrombose leading finally to occlusion of the main coronar arteries, which in turn existed for a fairly lon time. That actual infarctions of large areas ha taken place at least twice was indicated by th localized areas of fibrosis, one at the base an the other at the apex of the heart. The absenc of evidence of a recent thrombosis or a fresh infarction indicated that the heart was able to survive the insult that was the final stroke in occluding all the main coronaries. That the heart apparently was able to compensate fully in the presence of this pathologic condition was one of th most interesting features of this case. The edem disappeared, the liver receded, the patient wa up and about for several days without symptom and he was discharged from the hospital with diagnosis of rheumatic fever (inactive), genera ized arteriosclerosis, mitral stenosis and insuff ciency, coronary sclerosis, fibrosis of the my cardium and congestive failure improved. Th atient walked out of the hospital in high spirits ut on entering a taxicab he suddenly fell. On xamination immediately afterward, he was proounced dead. At autopsy the lesions found beides those of the heart were infarctions in the ung, chronic cholecystitis, fatty degeneration of he liver, cyst in the pituitary gland, and cerebral dema and congestion.

FUNDAMENTAL DIFFICULTIES IN TREATMENT OF PEPTIC ULCER

Walter Lincoln Palmer, Chicago (*Journal A. I. A.*, Nov. 18. 1933), presents evidence that hows that ulcer formation is dependent on the resence of acid gastric juice. The fundamental ifficulty in therapy is conceived to be that of rotecting the lesion or the cells of the mucosa rom the destructive effect of the acid. Mucin r some such substance may form a coating over he surface of the ulcer and thereby protect it rom the attack of the acid, but satisfactory proof f this has not yet been produced. Mucin does ot accomplish complete neutralization of the astric free acidity. Atropine, in physiologic oses, decreases gastric secretion, but the attendnt atropine effects seriously limit its usefulness. ostro-enterostomy may or may not lower the cidity but rarely produces complete neutralizaion. Subtotal gastrectomy usually results in omplete and permanent anacidity. The objecions to its general adoption are the relatively high mortality rate and the gravity of the lesions when they do recur. Complete and continuous neutralization may be accomplished in many cases y the hourly milk and cream and alkali regimen f Sippy. Frequently, however, it seems imposible to obtain satisfactory control of the free cidity even with large doses of alkali. In spite f this fact, conservative medical therapy based n the principle of acid neutralization remains he treatment of choice for uncomplicated peptic lcer.

VACCINATION AGAINST WHOOPING COUGH

Thorvald Madsen, Copenhagen, Denmark (*Journal A. M. A.*, July 15, 1933), states that he vaccine used in the State Serum Institute in Copenhagen is always made from several recenty cultivated strains of Bordet-Gengou bacilli; forty-eight hour blood agar cultures are emulsified in physiologic solution of sodium chloride ontaining 1 per cent solution of formaldehyde, o that the suspension contains about 10,000 mil- is given in three injections intramuscularly or subcutaneously with intervals of from three to four days: 0.5, 0.7 and 1.0 cc. This dosage is greater than that usually employed. The author believes that the reason for the difference of opinion concerning the value of the vaccination lies to some extent probably in the fact that no sufficient distinction has been made between the therapeutic and the prophylactic properties of the vaccine. Most of the reports conclude that if given early in the catarrhal stage the vaccine will have a good effect. This appears from the reports of most of the Danish officers of health. The greatest difficulty in the appraisal of the effect of whooping cough vaccination is that no suitable control material is at hand. During two epidemics in the Faroe Islands, where suitable control material was available, the mortality in the vaccinated group was one sixteenth of that in the nonvaccinated group. This figure is sufficiently large to prove the usefulness of the vaccination when carried out in time. Furthermore, the disease in vaccinated persons takes a much milder course and is of shorter duration.

BENIGN LESIONS OF THE FEMALE BREAST SIMULATING CANCER

Max Cutler, Chicago (*Journal A. M. A.*, Oct. 14, 1933), describes several innocent states of the breast which simulate cancer and discusses the diagnosis and treatment of some borderline conditions the exact nature and future course of which it is becoming increasingly difficult to estimate, as they are encountered in their earlier stages. The author believes that transillumination is a diagnostic aid in localizing duct papillomas in the breast. In some cases, however, the papillomas are so small that no shadow can be detected on transillumination. This is especially true when the discharge is essentially serous. In older women in whom a hemorrhagic discharge from the nipple is more likely to be associated with duct carcinoma or in whom a duct papilloma is more likely to be complicated by carcinoma, especially in the presence of suggestive nodularity in the breast, wide surgical excision or local mastectomy is the safest method to adopt. In younger women in whom the presence of carcinoma is less probable and to whom the loss of the breast is of greater concern, the author does not feel justified in adopting such radical measures. On the other hand, he takes the view that to permit such a lesion to remain untreated is a dangerous attitude to assume. He treats younger women suffering from a serous or serohemorrhagic discharge from the nipple, especially when localization of the lesion is impossible or uncertain, by means of interstitial irradiation (removable platinum needles). He concludes that this method should be even more efficacious in the treatment of duct papillomas or of early duct carcinomas. This method possesses the advantage of avoiding removal of the breast in young women to many of whom the surgical procedure constitutes a considerable psychologic shock. It possesses the disadvantage of not permitting microscopic confirmation of the diagnosis.

COMMENTS ON HIGHER X-RAY VOLTAGES

Albert Soiland, Los Angeles (*Journal A. M. A.*, Sept. 30, 1933), suggests that the new high voltage roentgen tube will supplant radium. It is possible, when its distribution has become more generalized, that it may supplant the use of the large and expensive radium pack or radium gun, affording opportunity to convert the latter into highly filtered platinum needles or tube applicators for interstitial use. This type of treatment offers an entirely distinct and different field from that of external radiation. It is his opinion that in the near future radium will be employed largely for interstitial applications, and short wave x-rays for treatment from the exterior. If the high voltage x-ray tube does nothing more than replace the expensive radium pack, it will have well served its purpose. Coincidentally, the price of radium may be reduced to a point at which it can be obtained at a more reasonable price and thus made available to institutions and radiologists who have heretofore been deprived of its use. Patients from the author's clinic who have been submitted to the Lauritsen tube have shown interesting reactions in some instances. Some with extensive secondary carcinoma of the glands of the neck, primary in the tongue, lip or tonsil, which had already been appreciably reduced with the 200 kilovolt tube and had become radiation fast, were perceptibly benefited, and in a few instances the use of the big tube caused entire disappearance of the growth. Similar reactions were observed in certain types of carcinoma of the fundus, metastatic carcinoma from the breast, and (in one patient) carcinoma of the rectum. Not in all were preliminary responses equally satisfactory, but enough has been observed to warrant the belief that time and experience will bring better results than are now obtained with the 200 kilovolt apparatus. According to Lauritsen, it is quite possible, both electrically and architecturally, to construct a transformer and tube of almost unlimited voltage. If time should demonstrate that its usefulness increases in proportion to its rise in voltage, a new field of endeavor will open for thos men who have faith in radiology and who continue to labor earnestly to keep pace with eac progressive step, and will mean much to an expectant public, which demands from these members and workers of the medical profession tha they give to them and to the world of the afflicte the fruit of their labors.

EDITORIAL PARAGRAPHS

Why not an eight hour day for the doctor?

Keep in mind the forthcoming Omaha-Mic west Clinics, beginning October 29.

The American College of Surgeons, Clinica Congress, meets in Boston, October 15-29.

The Inter-State Postgraduate Clinical Assembly will convene in Philadelphia, November 5-9 1934.

Comes now an English philosopher who say that opposites do not attract, but that likes d attract.

The American Medical Directory, Thirteent Edition, is off the press. It contains biographica facts about 176,000 physicians.

Hospitals, notably the Nicholas Senn in Omaha, are now offering reduced flat rates in a effort to meet economic conditions.

The Lilly Research Laboratories, Indianapolis will be dedicated October 11, 1934. The Journa editor acknowledges an invitation to be a gues of the Eli Lilly company on that occasion.

A new quinine derivative, as a cure for pneumonia has been announced before the recent meeting of the American Chemical Society at Cleveland. The new drug is called beta-hydroxyethyldrocupreine.

Dr. John A. Kolmer, professor of medicin at Temple university and director of the research institute of cutaneous medicine of Philadelphia announced what he said was a successfu vaccine against infantile paralysis.

The eight hour day for nurses is on the wa westward. It is in successful operation in at lea 11 hospitals in Greater New York. It is in lin with the movement for shorter hours, but wo unto the patient whose relatives or friends pa the bills.

This is to advise the next medical examinatio will be given November 22-23, State House, Lin oln. Basic Science Oct. 2-3, State House, Linoln. All applications must be on file at least 5 days prior to date of examination.

Two black widow spiders have been observed n western Nebraska this summer. One person vas bitten by a black widow, but after a serious illness, recovered. It is suggested that many nsects heretofore not found in Nebraska may nave reached the state during the very hot sumner.

The Cook County Graduate School of Mediine offers a two week's intensive course in Inernal Medicine; a two week's intensive course in Ear, Nose and Throat; a ten days intensive ourse in Traumatic Surgery, beginning October 2, provided a sufficient number register for the vork in advance.

Dr. W. P. Wherry of Omaha was elected executive secretary-treasurer of the National Associaion of Eye, Ear, Nose and Throat specialists at ts annual convention at Chicago Thursday. Dr. Frank E. Burch of Kansas City was chosen presdent-elect. The next meeting will be held in Cincinnati in September, 1935.

Fifty years ago the teaching was that the averige catheter life of man was about two and oneialf years. We know that catheter life may be nuch longer, probably because of better knowledge of sterilization and antisepsis. A 94-yearold friend of the editor has led a catheter life for upward of twenty-five years.

The Michigan State Medical Society announces the retirement of its Secretary, Dr. F. C. Warnshuis, effective September 15th, 1934. Doctor Warnshuis is leaving Michigan to assume the duties of Secretary-Treasurer of the California Medical Association on October 1st, 1934. Dr. Warnshuis has for some years been and is the present Speaker of the House of Delegates of the American Medical Association.

A lay friend with an interest in electricity has perfected an apparatus to cure enuresis by education and suggestion. The apparatus, among other things has a buzzer and a light. The least wetting makes an electrical contact which sets off the buzzer and lights the bulb; the patient is awakened by the noise and light. After a number of trials the patient will waken before the involuntary flood occurs. No part of the apparatus comes in contact with the patient's body.

Regardless of the reader's position on the problem of drinking malt, vinous and alcoholic beverages, the following statistical information from the *Omaha World-Herald* and other sources must prove interesting:

Omaha	1933	1934	Pct. Inc.
Drunkenness	2,149	3,463	61
Drunkenness and assault	30	43	43
Drunk and disturbing peace	483	850	76
Drunk and reckless driving	229	339	50
Total	2,892	4,695	62

From Washington, D. C., where the Eighteenth amendment has been wiped out and all kinds of liquor have full sway comes the following report:

	1933 1st 6 mos.	1934 1st 6 mos.	Pct. Inc.
Traffic fatalities	33	66	100.0
Driving while intoxicated, arrests	122	165	47.3
Intoxication, arrests	8,515	12,123	43.3
Jail commitments, intoxication	5,426	6,889	26.9

OBITUARY

George Roeder, Omaha, retired; native of Omaha; Omaha Medical College, 1892; son of the late Dr. Augustus Roeder, pioneer Omaha physician; for many years in practice at Grand Island; later at Los Angeles, returning to Omaha after retirement; member, Nebraska State Medical Association; died August 29, 1934, of pneumonia following a fractured arm, aged seventy-three years. A son, Dr. Clyde Roeder, and a daughter survive.

Ernest A. Creighton, Red Cloud, Nebr.; University of Western Ontario Medical School, London, Ont., 1898; practitioner at Red Cloud, for thirty-five years; interested in eye, ear, nose and throat diseases; member, Nebraska State Medical Association; a very fine character, interested in the civic affairs of his community; died the middle of August, 1934, aged about sixty-three years.

Shirley Q. Elmore, Fort Logan, Colo.; Creighton Medical College, Omaha, 1907; practitioner at Gretna, soon after graduation; a major in the regular army for many years, recently stationed at Fort Logan, Colo.; died aboard a boat bound for Honolulu about the middle of August, 1934, aged about fifty years.

Walter G. Rundle, Lincoln, Nebr.; Rush Medical College, 1906; practitioner at Orleans for twenty years, preceding his removal to Lincoln within the past year; member, Nebraska State Medical Association; died September 10, 1934, aged about fifty-eight years. A widow and three sons survive.

Warren F. Eckles, York, Nebr.; native of Carthage, Ill.; College of Physicians and Surgeons, Keokuk, 1898; after two years of practice in his native town, he located at York, Nebr.; where he did a general practice for thirteen years; thereafter preparing himself for special work in eye, ear, nose and throat work he specialized for the past twenty years; a man interested in the civic affairs of his town and community; member, Nebraska State Medical Association; died, suddenly at his home, after a busy day in his office, August 16, 1934, aged sixty years. A widow, Dr. Dora B. Eckles, and a son survive.

NEBRASKA WOMAN'S MEDICAL AUXILIARY HEALTH EDUCATION OUTLINE 1934-1935

(Continued From September Journal.)

12. Do you have complete birth registration by adequate laws requiring reporting within three days after birth? Are the records of births and deaths properly kept?

13. Have you public health nurses?

14. What coordination is there between the Department of Health, the Medical and Dental Societies, the voluntary agencies, and the private physician as to diagnosis and reporting of communicable disease?

Nebraska Statutes, 1929, 71—2303. Contagious Diseases—By Whom Reported.

"All boards of health, and physicians in localities where there are no boards of health, or where such boards shall fail to act, shall report to the department of public welfare promptly upon the discovery thereof,—the existence of any one of the following diseases: Typhoid, chicken pox, diphtheria, influenza, scarlet fever, mumps, tuberculosis, meningitis, poliomyelitis, syphilis, gonorrhea, smallpox, measles, whooping cough, and such other contagious and infectious diseases as the State Board of Health may from time to time specify.

"Any member of the board or any physicians knowing of existence of such disease, who shall fail to report promptly same in accordance with the provisions of this section, shall be deemed guilty of a misdemeanor and upon conviction thereof, shall be fined in any sum not less than ten dollars, nor more than one hundred dollars for each offense."

R. S. 1913, 2740—1919 P. 780. C. S. 1922, 8224.

Wilful or repeated violation of the rules for the reporting of communicable diseases places the practioner's license in jeopardy. (Div. vi, chapter 167. Session Laws, 1927.)

1. Nursing service in prevention and spread of disease.

2. Instruction on cases in homes.

3. Continuation of treatment, especially in case of venereal disease under care of private physician and in clinics until non-infectious stage is reached.

4. Immunization against certain communicable diseases.

5. Scientific treatment of disease instead of advertised store remedies, home medication or advertising quacks.

April—General Sanitation and Disease Control. Public health work is a specialized field of medical service requiring training and experience along lines of epidemic control, sanitation and public health education.

I. Consolidation of City and County Health Departments (Study Envelope No. 3, County Health Unit).

1. What does your city or town spend for the health department?

2. What does your county spend for the health department?

3. Population of your city or town?

4. Population of your county, outside of the city or town.

5. What is the combined population?

6. What is the combined budget for health?

7. Is the health service adequate for the sum spent?

8. What service is performed by the city that the county could not do, and what by the county that the city could not do? Has each one definite services that could not be done by one alone?

9. Could better service be obtained by combining the two budgets for the total population?

10. Could one full-time director trained in the medical and public health field adequately direct the preventive and curative work of a combined city and county health department?

II. Adequate Public Health Legislation.

Nebraska needs permissive legislation to authorize merging of city and county health departments.

A. Adequate funds should be provided for necessary health protection through a special mill levy. (Note the presentation of public health measures in our legislature.)

The type of public health organization which a community maintains and supports certainly determine the character of the service given. The basic service in a county health department seldom approach accepted standards of adequacy if the budget is muc less than a dollar per capita.

The basic health services should be performed b the official health agency since it is the only wa such services can be given necessary legal backin and stable financial support.

May—Health Round Up.

I. Object—Health education for every group in th community.

II. Procedure:

1. Personal appeal to school superintendent, scho principals (public and parochial).

a. Offer assistance such as searching files of Hygei for health plays, poems, stories, posters, etc.

The Teeth That Jack Built (Mouth Hygiene).
Trial of Johnny Jones (Nutrition).
School Room Imps (Health Habits).
Trial of Jimmy Germ (Germs).
The Costly Party (Contagion).
Bag of Fresh Air Dreams (Fresh Air).

b. Suggest that pupils make file for newspaper an magazine articles on health.

c. Original plays, for a prize or to be presented a assembly or on radio. Health stories for Englis classes.

d. Art classes make posters illustrating posture, nutrition, exercise, rest, clothing, etc.

e. Talks on health by pupils and teachers. All talk should be abstracted by local medical and dental societies to be sure of correct information.

2. Classes in social studies should be assigned thes questions and sent by individuals or by groups to th office of county clerk and to the local health office for the information:

a. Have you a county health officer? A count health board?

b. How appointed?

c. Any deputies? How appointed?

d. Duties of these.

e. Responsible to whom for performance of duty

f. Qualifications:

(1) Public health knowledge or political?

g. Quarantine laws enforced?

h. Funds for health work obtained how?

(1) By whom apportioned?

(2) By whom administered?

i. What provisions are made for pure water, pu milk, pure food, sewage and garbage disposal, inspection of slaughter and packing houses, restaurants, et Study duties and services of physicians, nurses ar health agencies, and the rules about contagion, qua antine and vaccination. (The Auxiliary membe should know these topics thoroughly enough to giv assistance to the teachers and pupils in their sear for information.)

3. Does the population area have any direct effe upon the disease incidence in your community?

4. Summer round-up of pre-school children co ducted by the physicians and sponsored by the P. T. and the Medical Auxiliary. At the same time co sider a plan for examination of all fifth grade pupi and high school freshmen. Study plan for feder assistance.

5. A May festival should conclude the health activ ties for the month, awarding prizes for essays a perfect posture.

THE SOCIETIES

The **Elkhorn Valley Medical Society** met at t Norfolk Country club, August 24, with an attendan of 78 physicians. Dr. G. N. Nilsson, Bloomfield, ga interesting case report of a case of anthrax which ent on to coma and then recovered under the in-ivenous and hypodermic use of anti-anthrax serum, total of about 15,000 units being used.

"Preoperative Preparation of Exophthalmic Goi-" with slides, Dr. S. F. Haines, Goitre Department, ayo Clinic, Rochester, Minn.

"The Indications for and the Results of Sympathec-my in the Treatment of Raynaud's Disease and rombo-angitis Obliterans (Buerger's Disease)", ntern slides, Dr. A. W. Adson, Chief of Neurological rgery, Mayo Clinic, Rochester, Minn.

Highly technical discussions present many difficul-s to the abstractor. It is evident, however, that the st word has not been said in the use of iodine in e preoperative and post operative treatment of iter. The use of digitalis in the goiter heart is also ill unsettled.

Dr. Adson gave a full and lucid discussion of sym-thectomy.

A series of movies on surgery, obstetrics and viosrol were shown by Mr. Collins of the Mead, John-n Co.

Dr. C. E. Beede, David City, was elected president d Dr. E. L. Brush, Norfolk, was reelected secretary-easurer.

The **Eighth Councilor District Medical Society** met Valentine, August 23. Dr. George Griot, Chadron, ve a talk on nose troubles.

The meeting then resolved itself into a round table scussion on fees and medical economics.

On August 28, 1934, the **Otoe County Medical Society** eld a noon-day luncheon and medical meeting at e Stricker hotel in Syracuse. The September meet-g was held on this date because of the Otoe County air being held at this time. Dr. John Allen of maha gave one of his interesting and cryptic talks n recent advances in the Diagnosis of Early Tuber-ulosis, with a discussion of the value of x-ray and e tuberculin test in assuring a proper diagnosis of e latent case, so-called. Dr. E. B. Reed of Lincoln as also a guest at the dinner. About ten county doc-ors were present.

On this date, also the first day of the fair, Dr. llen and Dr. Reed aided Otoe county doctors in di-ecting the progress of a 4-H Health Clinic and Baby ealth Clinic respectively. The particular thing no-iceable in most of the contestants, both babies and outh, was the exceptional health attributes of each ne, and both guest physicians remarked about this eature.

During the three days of the Otoe County Fair, ug. 28-30, the Otoe County Medical Society in co-peration with the nurses, county nurse for FERA, iss Stephens of Nebraska City, and the Metropoli-an Life Insurance Company, a Health Booth and athological display was maintained. The visiting ublic expressed surprising interest and desire to earn more of health problems, and this fact should ip the medical profession to the need for more of uch activity in letting the public know we are alive. otion pictures on Public Health, Health Examination nd Prevention of Communicable Diseases, with an . M. A. exhibit on Dangers of Self Diagnosis were ncluded. The response of the public was very grati-ying.

—Roland H. Loder, Sec'y.

The **Richardson County Medical Society** met at umboldt, August 15. Following an excellent dinner hree very interesting papers were given by medical en of St. Joseph, Dr. Floyd Spencer, Dr. E. M. Shores and Dr. G. E. Wadlow. The meeting brought orth many interesting discussions. Nearly all mem-ers of the county society were present.

A regular meeting of the **Custer County Medical Society** was held August 23, at the Arrow hotel. The doctors and their wives had dinner at 6:30 o'clock, followed by a business meeting.

Dr. R. D. Martin of Hastings read a very interesting paper and held a discussion on the "Middle Ear and Mastoid." Dr. D. B. Kantor of Sargent discussed kidney diseases, and Dr. R. D. Bryson of Callaway talked on "Obesity."

The **Eleventh and Twelfth Councilor Districts** will hold their annual medical meeting in Sidney, November 12th and 13th. They are planning a strong scientific program, consisting mainly of guest speakers. The entertainment committee is working diligently to supply entertainment for all the doctors and their wives, including duck hunting for all those so desirous.

On September 6th, at Hartington, the **Cedar, Dixon, Dakota, Thurston and Wayne Counties Medical Society** held its regular meeting. A dinner preceded the scientific program: Surgical Treatment of Arthritis, (illustrated by movies and lantern slides), Dr. Archie O'Donoghue, Sioux City; Prostatic Resection, Dr. Lawrence E. Pierson, Sioux City; Pediatrics, Dr. Dyson, Sioux City.

The **Madison Six County Medical Society** met at Wisner, September 18. A dinner at the Lutheran church preceded the scientific meeting. The program:

Dr. Donald J. Wilson, Omaha, Diagnosis and Treatment of Common Skin Diseases. Illustrated by lantern slides.

Dr. Ernest L. MacQuiddy, Omaha, Practical Aspects of Allergy.

The **Seventh Councilor District Medical Society** will hold its fourteenth annual meeting in the Auditorium of the Girls' Training School, Geneva, on Thursday, October 18th.

The **Thayer County Medical Society** held its quarterly meeting at the Town Hall at Bruning on September 13th. Following a dinner, served by the M. E. Ladies' Aid, G. H. Rucklos, D. D. S., Deshler, presented a paper on "Etiology of Dental Anomalies," and L. L. Zierott, M. D., Chester, presented a case report of "Cystic Kidney." Eleven physicians and five dentists were present.

HUMAN INTEREST TALES

Dr. Jane Lewis, Red Cloud, has resumed practice.

Dr. E. C. Henry, Omaha, submitted to an operation early in September.

Dr. M. M. MacVean Edwards, Nebraska City, has been ill for some time.

Dr. M. H. Carrig and family, Stuart, motored to Illinois in early September.

The marriage of Dr. A. L. Miller, Kimball, and Miss Florence Uhl is announced.

Dr. and Mrs. P. H. Salter, Norfolk, spent several weeks at Alexandria, Minn.

Dr. Stuart Cook, Randolph, fished in northern Minnesota in early September.

Dr. and Mrs. R. A. Newton, Genoa, camped and fished in Minnesota in August.

Dr. O. C. Ehlers, Ravenna, spent some time in Minnesota, last month, fishing.

Dr. and Mrs. H. Melerian, Plainview, spent part of the summer in the Yellowstone.

Dr. and Mrs. A. E. Stuart, Cedar Bluffs, spent several weeks in Colorado, recently.

Dr. and Mrs. Elmer Porter, Omaha, spent three months this summer in California.

The Dr. F. L. Wilson family, Stuart, visited Glacier National Park during the summer.

The Dr. I. H. Dillon family, Topeka, visited in Auburn, their former home, in August.

Mrs. W. I. McFarland, wife of Dr. W. I. McFarland, Hebron, died suddenly on August 13th.

Dr. Paul Stappenbeck and family, Brock, had a trip to Mexico for a summer vacation.

Dr. G. J. Hess and wife spent some time in the Black Hills and Colorado this summer.

Dr. and Mrs. E. C. Hanisch, St. Paul, Nebr., spent some time in the state of Washington.

Dr. R. P. Westover and family, Plattsmouth, spent six weeks on a trip to the Pacific coast.

Dr. E. J. Oxford, Chambers, was severely injured early in September, in an auto collision.

Dr. J. V. Beghtol, Hastings, spent six weeks in Denver and Hollywood during the summer.

Dr. E. L. Brush, Norfolk, sustained slight injuries in a car collision that wrecked his new car.

Dr, and Mrs. R. D. Balcom, Las Vegas, Nevada, visited their former home, Genoa, in August.

Dr. and Mrs. E. E. Farnsworth, Grand Island, spent the vacation period near Grand Marais, Minn.

Dr. William Wayne Waddell, son of a well known Beatrice physician, is about to locate in Beatrice.

Dr. and Mrs. G. A. DeMay, McCook, visited the doctor's parents at Fort Collins, early in September.

Dr. N. Frederick Hicken has become associated with Dr. R. Russell Best, Omaha, in the practice of surgery,

Dr. W. O. Colburn, Lincoln, was a patient at St. Mary's Hospital, Rochester, Minn., in August and September.

Dr. E. B. Banister, former Omahan, has located at Appleton, Wis., specializing in eye, ear, nose and throat surgery.

Dr. Arthur Abts, Humphrey, underwent an operation for obstruction in Omaha recently and made a satisfactory recovery.

Dr. P. R. Slumberger, Oakdale, escaped unscathed from an auto wreck that mutilated the top and upper machinery of his car.

Dr. and Mrs. Perry Allerton, Elgin, Ill., former Tildenites, visited friends at Tilden and other points in Nebraska, recently.

The marriage of Dr. George Salter, Norfolk, and Miss Audrey Bauer, Erie, Pa., the latter part of August, is announced.

Dr. Paul Siman, Wayne, has taken a year's assistantship with Dr. Arthur Steindler, Iowa City, internationally known orthopedist.

Dr. Hans Lauber, Warsaw, Poland, visited the Drs. Callfas, in Omaha, early in September. Dr. Lauber was an honor guest at the meeting of the American Academy of Ophthalmology, in Chicago.

Dr. and Mrs. C. W. Slagle, Alliance, spent all of July and most of August visiting England and southern Europe. They also saw the Passion Play at Oberammergau.

Drs. I. C. Munger, Lincoln; H. V. Nuss, Sutton; W. I. Musfelt, Ohiowa; R. F. Decker, Byron, spent two weeks during August on active duty training with the C.M.T.C. at Fort Des Moines, Ia.

Dr. A. J. Schwedhelm, who until two years ago was in practice in Creighton, after two years of special work in surgery at the University of Pennsylvania and elsewhere, has located in Norfolk to practice surgery.

BOOKS RECEIVED

OBSTETRIC MEDICINE: The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy, by forty contributors, edited by Fred L. Adair, M. A., M. D., F. A. C. S., Chairman of the Department of Obstetrics and Gynecology, University of Chicago, and Edward J. Stieglitz, M. S., M. D., F. A. C. P., Assistant Professor of Clinical Medicine, University of Chicago. Octavo, 743 pages, illustrated. Cloth, $8.00. Lea and Febiger, Philadelphia.

ROSTER OF OFFICERS—1934

Joseph Bixby, Geneva, President	19
C. A. Selby, North Platte, President-elect	19
George L. Pinney, Hastings	19
William Shepherd, Rulo	19
R. B. Adams, Lincoln, Secretary-Treasurer	19

COUNCILORS

A. P. Overgaard, Omaha, Secretary	19
W. R. Boyer, Pawnee City, Chairman	19
R. J. Lehnoff, Lincoln	19
E. L. Brush, Norfolk	19
Homer Davis, Genoa	19
H. E. Potter, Fairbury	19
D. D. King, York	19
W. J. Douglas, Atkinson	19
R. D. Bryson, Callaway	19
L. W. Rork, Hastings	19
C. A. Selby, North Platte	19
A. L. Cooper, Scottsbluff	19

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	19
B. F. Bailey, Lincoln	19

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Linco

PROGRAM COMMITTEE

R. B. Adams, Chairman	Linco
E. G. Zimmerer, Chairman Medical Section.	Linco
Morris Nielsen	Bla
W. J. Arrasmith, Chairman Surgical Section	Grand Isla
J. W. Duncan	Omah

CANCER COMMITTEE

James F. Kelley, Omaha, Chairman	19
Geo. Covey, Lincoln	19
W. C. Harvey, Gering	19
John Buis, Pender	19
J. M. Willis, McCook	19

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Linco
J. W. Duncan	Omah
R. W. Fouts	Omah
E. W. Rowe	Linco
L. F. Egan	Hastin
R. B. Adams, Ex-Officio	Linco

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madis
A. F. Tyler	Omah
B. F. Bailey	Linco
R. B. Adams, Ex-Officio	Linco

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Linco

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Linco
F. Heagey	Omah
F. W. Buckley	Beatri

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omah
C. A. Hull	Omah
R. B. Adams	Linco

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls Ci
F. W. Heagey	Omah
John T. Myers	Omah
J. S. Welch	Linco
C. W. M. Poynter	Omah

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. 19 Norfolk, Nebraska, November, 1934 No. 11

CONTENTS

	Page
The Use of Morphine in the Treatment of Acute Peritonitis, Thomas G. Orr, M. D.	401
Transportation and First Aid in Fractures of the Extremities, C. Fred Ferciot, M. D.	404
Correcting Deformities of the Velum and Mesopharynx to Insure Better Speech Following Cleft Palate Surgery, H. N. Boyne, M. D., D. D. S., M. S.	407
An Account of the Influenza, Benjamin Rush, M. D.	410
The Treatment of Chronic Empyema Thoracis, J. Dewey Bisgard, M. D.	413
Artificial Impaction of Fractures in the Neck of the Femur, Herman F. Johnson, M. D., F. A. C. S.	416
Postoperative Care, H. S. Andrews, M. D.	419
Rheumatic Fever in Children, J. Harry Murphy, M. D.	424
Acute Mastoiditis Bilateral, Lateral Sinus Thrombosis, Cerebellar Abscess, Operation and Recovery, Herman E. Kully, M. D.	427
EDITORIAL—	
Medical Economics at the Annual Conference	428
Toward a Permanent Medical Aid Program	428
Human Convalescent Serum in the Treatment of Preparalytic Poliomyelitis	429
Dr. Edward Livingston Trudeau	429
Rights of Physician and Duty of County Boards	431
Cholera on Overland Trail	433
Editorial Paragraphs	434
Obituary	435
Tuberculosis Abstracts	435
Auxiliary News Notes	436
Calendar and Programs for the Lancaster County Medical Society for the Current Society Year	437
The Societies	437
Human Interest Tales	438
Books Received	439

THE USE OF MORPHINE IN THE TREATMENT OF ACUTE PERITONITIS*

THOMAS G. ORR, M. D.,
Department of Surgery, University of Kansas School of Medicine,
Kansas City, Kansas.

In the logical treatment of peritonitis, the ecessity of a careful consideration of the path- logic processes that develop and the general per- ersion of the normal physiology that exists must e appreciated. It is recognized that the infect- ng organisms may be varied and the same mor- hologic types may differ much in their virulence nd general effect upon the host organism. Both erobes and anaerobes may be active as patho- enic or lethal factors. The definite role played y the latter group has not yet been definitely roven, although evidence has been presented vhich indicates their importance(1–2). When the dentification and true nature of all infecting bac- eria are known specific therapy may be devel- ped. The experimental work of Smith(3) suggests that streptococcic sera may prove of therapeutic value. The sera now used to neutralize the toxins of anaerobes is a step in this direction. While infecting micro-organisms must be considered the initiating factors in peritonitis they may by no means be the only or even the chief lethal factors.

It is believed by some eminent surgeons that obstruction of the intestine is the real danger and the cause of death in peritonitis(4–5). Without distention, peritonitis due to perforative lesions of the intestinal tract is rarely fatal. We can, therefore. say with great assurance that the obstruction and consequent distention of the small bowel is a very important part of the pathology of peritoneal infection. The peritonitis developing from perforating appendicitis involves the peritoneum of the lower abdomen first and rarely spreads higher than the level of the umbilicus. The portions of small and large intestine involved in the inflammation are thrown out of function by the direct action on the bowel wall by the infection, causing obstruction to the onflow of intestinal content from above. While there may not exist an actual occlusion of the involved gut, the normal activity is destroyed, causing the existence of an obstruction as long as the involved bowel is functionless. It would, therefore, seem logical to assume that to control distention of the small bowel and stomach is an essential part of peritonitis treatment.

---

*Presented before the annual meeting, Nebraska State Medi- al Association, Lincoln, Nebraska, May 22-24, 1934.

In a series of experiments on animals, Raine and Perry(6) found that removal of the stomach contents every eight hours or draining the stomach and duodenum by gastrostomy definitely prolonged life in jejunal obstructions by decreasing intra-intestinal pressure. By increasing the intra-intestinal pressure with liquid abolene, which is not absorbed, death occurred eight to ten hours sooner than in simple obstruction. They believe that increasing intra-intestinal pressure stimulates secretion and diminishes absorption. In peritonitis and other obstructive lesions of the small intestine, it should then be the object to prevent over-distention of the bowel by emptying it of its contents above the obstructed point and by maintaining its tone until the involved portion has been restored by the natural defenses of the body. There can be little doubt about the rationale of emptying the obstructed intestine of its contents, since nature teaches us this lesson in a decided manner by producing vomiting. Toxic absorption of the obstructed bowel content is not the chief reason for its removal, since it is very doubtful if absorption of toxic products occurs as long as intestinal activity exists and the blood supply is not disturbed(7). In simple obstruction, emptying of the bowel is chiefly indicated to prevent overdistention.

The methods used to control distention of acute peritonitis and intestinal obstruction are decompression by means of suction through an indwelling nasal tube, drainage by enterostomy, stimulation of tone by sodium chloride and stimulation of tone and contractions by morphine. Each of these methods of treatment has its useful place in the treatment of peritonitis and all may be indicated in any single case. There can be no doubt concerning the efficacy of continuous gastric and duodenal suction to remove the gas, air and liquid content of the stomach and upper intestine. Both Ward(8) and Wangensteen(9) have demonstrated the value of such treatment, describing in detail the technic of its use. It seems reasonable to believe that the continuous gastric suction has rendered unnecessary high jejunostomy for drainage of the upper intestine so frequently advocated in the past(10–11). Enterostomy to drain the lower small intestine is indicated in selected cases of peritonitis, especially at the time of the primary appendix operation. Easton and Watson(12) recommend primary caecostomy or enterostomy in severe acute peritonitis. It is of doubtful value in late, well developed. spreading peritonitis, but may be life saving in localized lower abdomina peritonitis when obstructive symptoms are prominent and associated with acute intermittent colicky pain and active peristalsis. The use of sufficient sodium chloride to maintain chemical balance is always indicated in obstructive lesions o the intestine. It has been repeatedly proven tha hypertonic solutions of sodium chloride stimulat bowel tone and increase peristalsis. While it ha not been demonstrated experimentally that physiologic sodium chloride solution stimulates bowe tone and peristalsis, it is reasonable to believe tha it has such effect in some degree when the chlorides are maintained at a normal level in the body

There has long been a misunderstanding concerning the action of morphine upon the intestina tract. It has been very generally believed that th administration of morphine abolishes all peristalsis and quiets or splints the bowel. It has, therefore, been given in cases of peritonitis to preven peristaltic action, which, when active, was b lieved to spread existing peritoneal infection.

The teachings of Alonzo Clark(13) first attracted world wide attention to the use of opiu and morphine in the treatment of peritoniti These observations began as early as 1840. Sinc then there have been many differences of opinio concerning the use of this drug in abdominal su gical conditions in general. Clark advocated ma sive doses of opium, at times of unbelievable ma nitude. It is recorded that he has given a wo an, on the twelfth day of the disease, as much a 261 grains of opium in twenty-four hours. A te year old boy, with peritonitis lasting forty day finally received as much as a grain and a quart of morphine every forty minutes. Clark believ "that to establish the narcotic effects of opiu within safe limits, and continue them by repeat administration of the drug, would cure unco plicated peritonitis—that a kind of saturation the system with opium would be inconsistent wi the progress of the inflammation and would su due it." Many prominent surgeons of Alon Clarke's time were not in agreement with h ideas concerning the use of opium and its deriv ves. In 1923, W. Carson(14) discussed the evo- tion of the modern treatment of septic peri- nitis, calling attention to opinions of famous en regarding the use of morphine. Lawson ait stated positively that "all opiates are forbid- en in my practice, unless they are required to ise the dying patient out of the world." Sir rederick Treves held a decided opinion that norphine should never become a feature in the utine cure of peritonitis. It masks the symp- ms, hinders the natural process of cure, and ampers treatment." Dudgeon and Sargent ad- se against the use of morphine stating that superadded to the toxic paresis of the bowel ay just turn the balance against recovery." ore recently Stockton(15) emphasized the mer- s of morphine in the treatment of peritonitis ecording the case of a girl, aged 11 years, to hom he gave the drug in doses of one-third to ree grains every four to six hours. Crile and ower(16) have recommended deep morphiniza- on in the treatment of acute appendicitis; their nception of its value being the prevention of xhaustion of the kinetic system.

Recent researches have called the attention of inicians to the fact that their previous concep- ons of the action of morphine upon the intestinal act have been erroneous. Instead of paralysis f the intestine morphine stimulates and increases e bowel tone and segmental movements. Any revious belief that beneficial effects of morphine peritonitis were due to quieting the bowel and educing spread of infection is founded upon alse premises. In 1926, Plant and Miller(17) onvincingly established that morphine has cer- in stimulating effects upon the smooth muscle f the bowel. They noted an increase in the gen- al tone, an increase in the amplitude of rhyth- ic contractions and an increase in frequency nd amplitude of peristaltic waves of the small owel. Gruber and Robinson(18), Dvorak and is associates(19) and Reid(20) have all made milar observations. Reid noted especially that ypertonic sodium chloride solutions injected in- avenously increased the propulsive power of the itestine but morphine did not, although the lat- er increased the tone and rhythmic activity. Re- ent experiments have shown that the obstructed eum of the dog will respond to morphine even e day of death, when the animal is already oribund(21). Wilen and Dragstedt(22) ex- ressed the view that the beneficial action of orphine on peritonitis must have some other in- erpretation than the abolition of intestinal ac- vity and putting the bowel at rest. Clinical ob- ervations have been made by noting the activity f the intestine through thin walled hernia sacs, protruding small bowel of enterostomies and by audible peristalsis after giving morphine by hypodermic injection.

It is well recognized that morphine and other opium derivatives produce constipation. This is explained on the basis of increased activity or spasm of the sphincter muscles, preventing the normal progress of the intestinal content. Observations made with barium in the stomach and ileum show a marked delay in passage of this medium through the pylorus and ileocecal valve. It is possible that a decrease in upper gastrointestinal tract secretions may aid in the delay. A diarrhoea frequently develops after withdrawal of morphine as convalescence from peritonitis progresses.

With reliable experimental evidence that morphine stimulates the tone and rhythmic contractions of the bowel its clinical application in the treatment of peritonitis and obstructive lesions of the gastrointestinal tract can be recommended with confidence. It is believed that as long as the bowel is not overdistended and maintains its activity, it absorbs the things it should absorb and does not absorb the things it should not absorb. A gut that retains its tone and blood supply absorbs gases readily(23). It has been observed that the morphine action on the bowel lasts as long as six hours. If given regularly every three or four hours it will exert a continuous action on the muscle of the intestine. The quantity given will necessarily vary much with individual patients. It is recommended that it be given in sufficient quantity to maintain the patient in a constant state of narcosis during the height of the disease. Usually one-sixth to one-fourth grain doses every three or four hours will be sufficient at the beginning of treatment. This may be increased as tolerance is acquired. Danger signals are respirations of twelve or below or beginning cyanosis. That there is danger of spreading infection within the peritoneal cavity by stimulating bowel activity has been very generally believed. This assumed danger may well be doubted, especially when compared to excessive distention which is undoubtedly a greater danger. Certainly increased gut tone and rhythmic contraction disturbs the relationship of gut coils very little.

In addition to the desirable action of morphine on the bowel to maintain tone and rhythmic activity, its value is recognized in its relief of pain, restlessness, thirst and apprehension, thereby conserving the patient's strength and endurance.

Repeated auscultation of the abdomen is a clinical test of great value in estimating the condition of the bowel activity. A silent abdomen is always an ominous sign. As long as peristalsis can be heard the rhythmic contractions are still present. The tinkling sounds of the partially gas filled intestine are characteristic and quickly recognized as an aid in treatment and prognosis.

Since the morphine treatment of peritonitis is only one phase of the subject careful attention must be given to maintenance of water balance, maintenance of chemical balance, proper supply of food, bed posture, and application of heat to the abdomen. The physico-chemical changes that take place in the body as a result of the infection and obstructive pathology are contributing lethal factors of great importance. The proper time for operation is still an undecided point in the treatment. It is probably wiser not to operate after peritonitis is well developed until the infection is localized.

SUMMARY

The treatment of peritonitis in the past with opium and its derivatives has been based upon th supposition that peristalsis was abolished and th bowel put at rest. In the light of more recen investigations this explanation must be held untenable.

Since overdistention of the bowel in acute peritonitis has such lethal portents it is logical to us any harmless means available to prevent distention by maintaining bowel tone and activity. Morphine given in proper dosage possesses the stimulating quality requisite for increasing bowel ton and rhythmic contractions, and, therefore is logically indicated in diseases characterized by abdominal distention.

Since no specific therapy for acute peritonitis i known, morphine and other supportive measure should be used to aid the patient in his figh against infection and its complications until th natural defenses of the body are able to ove come the disease.

(Bibliography in Reprints)

TRANSPORTATION AND FIRST AID IN FRACTURES OF THE EXTREMITIES*

C. FRED FERCIOT, M. D.,
Lincoln, Nebraska.

Up to the time of the World War, fractures occurred largely in industrial communities and were cared for usually by industrial surgeons. Since that time, rapid transportation by automobile and airplane has changed the picture markedly. Highway accidents occur in any and every locality and thus the injured are most often seen first by the general practitioner rather than by the industrial or orthopedic surgeon. Many of these injuries are minor and remain so, others are major or may become so if not properly cared for. Any fracture is a major injury from the start, presenting as it does the possibility of death, disability, loss of earning power and economic dependence. When it is realized that the average estimate of fractures occurring annually in this country is approximately one million, the economic and social importance of proper treatment is better realized.

In a report given several months ago by Frederic W. Bancroft, chairman of the fracture Committee of the American College of Surgeons, he states that "the greatest problem we have to face is the jack-knifing of long bones after fracture during their transportation to hospitals. First aid in automobile accidents on highways often does more damage than the original injury."

To quote from "An Outline of the Treatme of Fractures," American College of Surgeon second edition:

"The injuries resulting from fractures are n limited to those occurring at the time of th accident. Unwise attempts to use the injure extremity may cause or increase displacement fragments, increase the laceration of soft part and perhaps lead to penetration of the skin b the ends of the bone. Similar additional traum is often due to the awkward efforts of the bystander. A man is struck by an automobile, thu breaking his leg. Except for the broken bon without displacement, the original injury may b merely a slight periosteal tear and a mild co tusion of the soft parts, but he is helped to h feet and the leg gives way and the fragmen slide by each other, thus stripping off the per osteum and tearing the muscles. He falls to th ground only to be picked up and carried to th sidewalk with the leg dangling. Larger bloc vessels are torn and the end of the bone com through the fascia, perhaps the skin and even th trouser leg. He is laid at rest with a coat b neath his head and surrounded by people anxio to help. Someone sees that his leg is crook and straightens it out. The exposed end of bo re-enters the wound with a bit of trouser an the dirt of the street. He is lifted up and ca ed to a car or ambulance. This time someone rries the injured leg with better intentions than o-ordination and the ends of the bone are urned around in their bed of lacerated tissues, nd the contamination is well disseminated roughout the area. Lack of sufficient protec- on as he is lifted to and from the x-ray table nd as he is being anesthetized, results in still ore injury."

---

*Presented before annual meeting, Nebraska State Medical Association, Lincoln, May 22-24, 1934.

Compare this exaggerated picture with a simi- rly injured man who is allowed to remain where e is until a proper splint can be applied, or at ast until he can have someone pull hard on his g as he is being lifted and carried, whose ex- mination is thoroughly but gently carried out nd whose treatment is instituted with but little dditional trauma. It can then be understood hy first aid treatment may often mean the dif- erence between rapid union and delayed union. etween a minimal period of disability and pro- nged hospitalization with the possibility of per- anent disability.

It is to avoid such unfortunate occurrences hat a nation-wide campaign is now being car- ied on for a return to "first principles" in the mergency treatment and transportation of such ractures. "Splint them where they lie" is the first nd most important axiom. "Avoid every un- ecessary manipulation." "Transport with ex- reme care." Lastly "Treat any existing shock," r better yet, prevent it.

The long side splints, commonly used in emergency work do not meet these requirements in he hands of most of those who render first aid. Even when applied where the patient may be found, they do not prevent over-riding, with accompanying shock and pain. Immobilization is far from ideal in most cases. A simple method of splinting is needed, one that can be properly applied by any layman with but brief training. During the early years of the World war this problem confronted the military forces and it was the British who first solved it by introducing he Thomas ring-splint for routine use in all in- uries of the extremities which might involve the bones. These extension splints were applied by he enlisted personnel, in the front lines, as a outine first-aid measure before the injured were moved. So successful was this method of treatment that it was adopted by all the Allied forces. For some time following the war this method seems to have been neglected in civilian life, but for the past decade its popularity has been steadily growing as its practical advantages have been demonstrated by many large ambulance services throughout the country.

Numerous modifications of the Thomas ring-splint have been made but we believe that the most practical in packing and application are those recommended by the Special Fracture Committee of the American College of Surgeons. They suggest the Keller-Blake hinged, half-ring splint for the lower extremity, and the Murray-Jones hinged ring splint for the upper. The advantages of these splints are that they may be packed in a flat package and may be used interchangeable on either the right or left side. These splints are readily available from any surgical supply dealer at a nominal cost and will stand several years of hard usage.

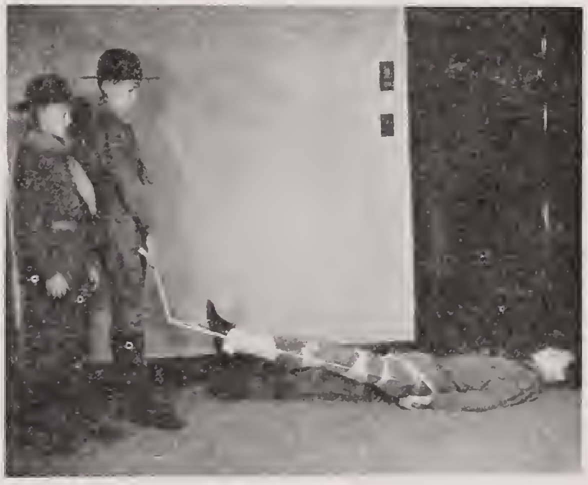


Figure I.—The Keller-Blake hinged half-ring splint, as applied to leg by Boy Scouts. Adequately immobillized and easy to carry.

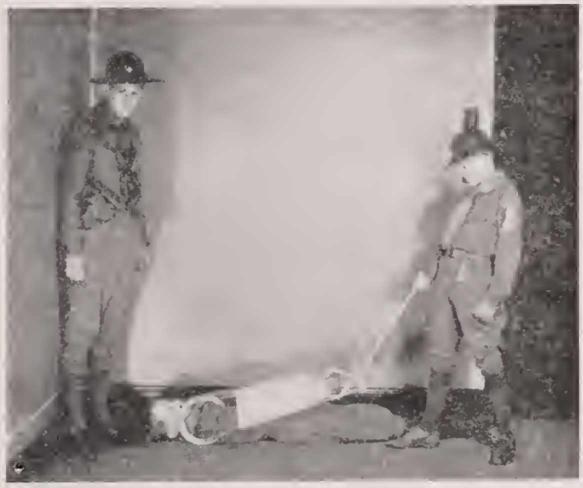


Figure II.—The Murray-Jones hinged ring splint, as applied to the upper extremity by Scouts after ten minutes instruction.

In First Aid practice, a splint should be applied in every case where there is any possibility of fractures between the hip joint and the foot and between the shoulder joint and the middle of the forearm. It should be used in both simple and compound fractures though originally suggested for use in compound war fractures. If there is a wound or if there are projecting bone ends, half strength tincture of iodine should be used and a sterile dressing applied. Should the bone ends dissappear when traction is applied, no harm is done as thorough debridement must be done when the patient reaches the hospital. However, it is imperative that the fact that the bone did project from the wound be reported to the doctor by those rendering first aid. Traction decreases the possibility of further contamination by effectively immobilizing the bone fragments.

The simplicity of application of this traction-ring splint is shown in the accompanying illustrations. Briefly, the essential points are; to maintain sufficient traction, and to firmly splint the affected limb by binding it firmly to the side rods of the splint. There are several methods which fulfill these requirements equally well and it makes little difference which is used. The method given below is both simple and effective, requiring no special equipment other than the traction-ring splint.

Method of application of the traction-ring splint to the lower extremity.

1. The patient is covered with a blanket.

2. The foot, with or without the shoe on is grasped by an assistant with both hands and steady firm traction is made in the axis of the extremity.

3. Maintaining traction, the whole limb is slowly lifted several inches from the ground and the half-ring splint is slipped under the injured extremity from the outer side.

4. The ring of the splint is pushed well up against the tuberosity of the ischium and the anterior strap tightened. The lower end of the splint rests against the body of the assistant who still maintains traction.

5. The ankle region is protected by cotton wadding and a traction hitch applied by tying a 30 inch strip of 3 or 4 inch bandage firmly about the ankle with the knot on the outside, and another similar strip about the ankle with the knot on the inside.

6. The long ends of the traction hitch are carried out over the side rods and tied firmly over the end of the splint. Traction is increased by Spanish windlass action with a tongue depressor which is fastened with a strip of adhesive plaster when sufficient traction is obtained. Manual traction is released.

7. The leg is supported in the splint either by a circular bandage running from the ankle to th thigh, or by applying four or five triangular muslin slings from ankle to thigh.

8. A supportive sling is placed under the hee to prevent rotation.

9. The end of the splint is suspended to th stretcher bar or to the roof of the ambulanc during transportation, preferably by a spring or rubber device, to prevent jarring.

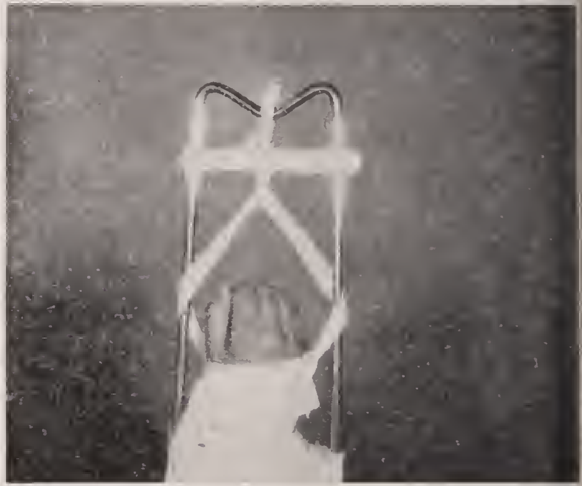


Figure III.—Spanish windlass traction device made by twisting traction straps with tongue blade and fastening with adhesive.

10. Should the fracture be compounded the wound is iodized and a sterile dressing applied as soon as traction has been applied.

The method of application of the hinged arm splint is essentially the same. Adhesive traction strips may be used very conveniently on the arm and are preferable where the splint will probably be worn for some time as they interfere less with the circulation than the circular traction hitch. In any method the foot or hand should be inspected at least twice an hour to make certain there is no constriction. Should this occur, the windlass may be partially released for a few minutes and then reapplied.

CONCLUSIONS

The advantage of transportation in traction may be briefly summarized as follows:

1. For the patient, it decreases the danger of further injury, lessens shock, and increases comfort.

2. For the physician, it simplifies reduction, decreases hospitalization, and makes for a better end result.

3. From an economic standpoint the advantages are self-evident.

Transportation in traction is being used successfully in many places. In a number of the larger cities it is required that all ambulances be equipped with some form of traction-ring splint for the arm and leg. It is the official method used in the army and has the full approval of the American Red Cross. It will probably be adopted by the Boy Scouts of America as part of their first aid training.

This problem of providing proper first aid and transportation to those suffering injuries of the extremities is one worthy of the active interest of every physician in bringing these facts to the attention of those who routinely render such services.

BIBLIOGRAPHY

1. Fauntleroy, A. M.: Surgeon, U. S. N. Report of Medico-Military Aspects of the European War. Government Printing Office. 1915.
2. An Outline of the Treatment of Fractures. American College of Surgeons. Second Edition. 1933.
3. American College of Surgeons. Year Book. 1934.
4. Kennedy, R. H.: Emergency treatment of Extremity Fractures. N. E. Jour. Med. 1932. 207. 393-395.
5. Moorehead, J. J.; Traumato-Therapy. W. B. Saunders Company. 1913.
6. Stevenson, Col. W. F.: Wounds in War. William Wood and Company. 1910.

DISCUSSION

DR. H. WINNETT ORR, (Lincoln): There are one or two points I should like to mention. First of all, I should be glad to endorse practically everything Dr. Ferciot said regarding the application of these principles as to emergency traction in fractures. The film, more than his remarks, impels me to say, however, that as we make so-called improvements in these things, we do not always make them better. Having seen this splint as used on the battlefields of France for a couple of years, I can say that the splint was more quickly applicable and just as efficient as the method shown here. The plan was to use the Thomas full ring knee splint and apply the traction by means of a pin through the shoe. One can tie on the traction in less than a minute. One twist of a bandage around the knee was all the immobilization necessary to protect against damage in transportation. As we improve these things, they are likely to become more complicated and take more time. The principles, of course, are perfectly correct and should always be employed.

Dr. Ferciot remarked that in certain parts of the country failure to treat patients in this way is being looked upon by the courts as negligence. Perhaps that should be true, but it is a dangerous thing to say, just the same. I am inclined to caution the younger men about making statements of this sort. They are likely to get somebody into unnecessary trouble.

Dr. Ferciot referred several times to the application of this method during the late war. I should like to remind him that this splint was employed by a midwestern doctor in Quincy, Illinois, in 1882. There is a report in regard to the matter in the first volume of the Transactions of the American Surgical Association in 1883. It takes a long time for these things to penetrate all the way round.

DR. FERCIOT (closing): I wish to thank Dr. Orr for his remarks. There are several points that I might mention which lead us to feel that these modifications are preferable to the full ring Thomas splint. One of these is the ease with which it can be packed and carried. It slips into a flat package and fits easily into the side of an ambulance or in the back of the doctor's car. It is to be admitted that the traction hitch takes slightly longer to apply (than the Ice-Tong or nail through the sole of the shoe). However in these days many people do not wear high shoes for which such traction would be applicable.

I think Dr. Orr is right in his suggestion concerning the legal liability in these cases, and I want to thank him for his criticism.

CORRECTING DEFORMITIES OF THE VELUM AND MESOPHARYNX TO INSURE BETTER SPEECH FOLLOWING CLEFT PALATE SURGERY*

H. N. BOYNE, M. D., D. D. S., M. S.,
Omaha, Nebraska.

We no longer consider cleft palate surgery successful simply because we have in some manner, attained a union of the two palatal halves. Individuals with cleft palates are handicapped in many ways, but the handicap of speech far surpasses all others. Therefore, we cannot consider operations for the repair of these palates successful, unless we have achieved a properly functioning palate making normal speech possible. Yet, in this day of refined surgery, only about five per cent of the operations performed enable the patient to speak correctly.

Until recent years, surgeons did not take note, that in a large majority of cleft palates, the structures needed for correct speech were not fully developed. Brophy went so far as to say that the two palatal halves were normally developed. This has been found to be true only in a very small percentage of the cases. Numerous comparisons have been made in recent years, between cleft palates and normal palates, and it has been found that in most of the clefts the palatal halves are much below normal in size and in function, and the mesopharynx is somewhat broader than normal.

To one who is not particularly interested in speech, the importance of these structures for enunciation may not be realized. The soft palate and the mesopharynx play important parts in the enunciation of certain sounds. The soft palate must be long enough to close up the posterior passage to the nose when necessary. This closure is necessary in forty of the forty-three sound units in the English language. If the operation has been successful in merely closing the palate without lengthening it, in those cases where it is not fully developed, this passage can only partially be closed during speech and naturally there will be many defects in enunciation. The mesopharynx must also be able to contract tightly in order to enunciate certain sound units. This cannot be done if the mesopharynx is broader than normal.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, Nebraska, May 22-24, 1934.

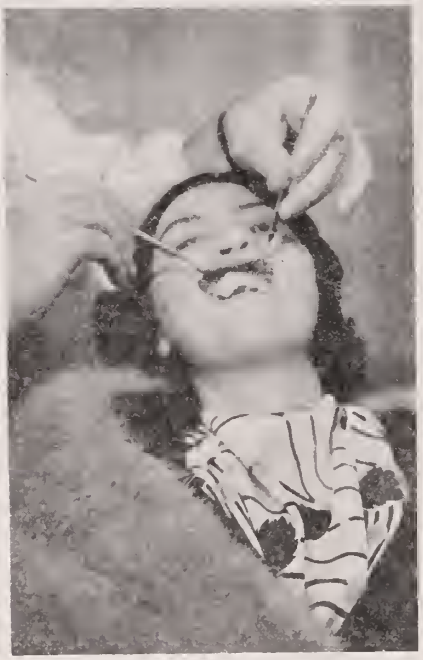


Figure 1.—Showing the narrowed maxilla and the misplaced teeth which is the result of a Brophy operation.

Leaders in this field of surgery, namely Blair and Dorrance of America, Veau of Paris, and Ernst and Halle of Berlin, have developed various operations to correct these defects. Although their operations differ somewhat, they have all agreed upon some very important factors, namely, the time and age to operate. I want to emphasize this point, as many men seem to be under the impression that we repair cleft palates immediately after birth. If a cleft palate is associated with a hare lip, the lip is repaired as soon after birth as possible, that is as soon as the child is physically able to stand the operation. This greatly improves the appearance of the child, greatly relieves the parent's mind, and the closed lip also affords a gentle inward pressure upon the two palatal halves. Pressure applied by passing wires through the maxilla, in order to bring these two halves together, is not considered good surgery. This pressure pushes in and narrows the maxilla to such an extent, that it will invariably cause a deformity. The narrowing of the maxilla causes the mandible to protrude. These wires placed at an early age, which is always necessary if the two halves of the maxilla are to be brought into close contact, will distort the tooth buds and may cause the teeth to erupt in different parts of the palate other than in their proper places. These deformaties have no place in good cleft palate surgery. The slight pressure exerted by the closed lip is sufficient to keep the maxilla halves in place which is all that is necessary.

There are a few men who still follow Brophy, who will tell you that a good hare lip cannot be done unless the palate has first been repaired, it affording a base to work upon. However, I am sure you will all agree that the men I have already mentioned are doing good work, and they all repair the lip immediately after birth, leaving the palate to be done later.

There is no reason why a cleft palate need be closed until the child is three years of age or thereabout, as they talk very little before that time; but there are many reasons why it should not be done until they are of that age. At this time the tissues are stronger, the oral cavity larger, and the operation always more successful. When operating at a very early age, the oral cavity is so small and the tissues so friable that the finer details of this surgery, which are so necessary if we are to expect good speech results, cannot be carried out. If we wait until the child is at least three years of age, the temporary teeth are in place and the permanent teeth have migrated up into their bony crypts, so that there is no danger of distorting these tooth buds and interfering with the natural alignment of these teeth when we move the palate flaps inward.

While all the men that I have referred to, have contributed considerably to this type of surgery within recent years, I believe that Ernst and Halle have the most nearly perfected operation. I can say this after having personally seeing most of the men work within the past year and having observed their results. While Veau of Paris has good results for the nasal French language, this operation is not so successful with individuals speaking English or the German.

The Ernst-Halle operation narrows the pharynx to such a degree and moves the palate so far back, that the muscles of the palate and the pharynx are able by contraction to produce the closures necessary for normal speech.

Describing this operation briefly is as follows:

Incisions are made laterally along the lingual side of the teeth backward and continuing vertically down along the inner aspect of the ascending ramus to the region where the palatoglossus is inserted into the tongue. The covering of the hard palate is then loosened with a suitable instrument and the muscles are lifted from the hamulus. The soft palate is then loosened without piercing the inner pharynx walls until the fascia of the internal pterygeroid becomes visible. We are then able by pressure of the finger, to mobilize the soft palate and the lateral pharynx walls back to the rear wall of the pharynx. These structures, together with their muscles, blood vessels, and nerves, can now be brought into contact without the slightest tension. The palate can now be further elongated if necessary by cross incisions above the uvula. All the loosening has been done so thoroughly and the palatal muscles made so free, that there will be no tension whatever upon the sutures that are placed. The inner mucus membrane is first sutured, the muscle layer with several sutures. and lastly the oral surface with as many sutures as may be necessary. A mattress suture is placed in the hard palate to keep the edges of the wound from curling.

After the sutures are placed the lateral wounds are packed fully with iodoform gauze, so that it will exert a slight pressure toward the center. A celluloid plate, that has been made before the operation to fit over the teeth and palate, is now padded with iodoform gauze and capped to the teeth. This will cause a slight pressure upward and hold the palate muscles into place. In three or four days this plate is removed and the iodoform padding changed. The packing in the lateral wounds is not changed for eight or ten days. At this time the padding upon the plate is changed to black gutta percha. This is so placed that it will come in contact with the palate at all points. Two gutta percha wings can now be built upon this plate to fill in the lateral wounds, or the iodoform packs may be continued, gradually diminishing them until granulation takes place. From this time on, we can gradually add gutta percha to the plate in such a manner as to give the palate any form or position necessary. In particular the soft palate may be brought back to the rear of the pharynx, and the pharynx narrowed to the extent that is necessary for the proper functioning of speech.

If the cleft is extremely wide and the palatal halves very short, this position can best be accomplished by pushing back the palate flaps. This is done in two operations. The hard palate up to the arteria major is operated first, preserving the artery to nourish the flaps. The two flaps are loosened in the usual manner, are then brought together, pushed back and sutured. It is then held in place by the celluloid plate. After about six weeks, or when complete healing has taken place the soft palate is closed as I have already described.

Ernst and Halle do all their operations with local anesthesia. I do some of my less nervous adults with local and proper premedication, but with children and nervous adults, I use avertin anesthesia supplemented with either local or ether insufflation.

There is no upper age limit for palate surgery. Ernst successfully operated individuals of seventy years of age. However, the acquisition of good speech becomes more difficult with years. It is the surgeons duty to put the organs of speech into proper shape, and it is then up to the patient, who will be able with a little perseverance to overcome the old defects and substitute the new sounds that are part of good speech. This operation makes it possible to overcome defects that remain after poor palate surgery has been done, and which never has been satisfactory from the standpoint of speech.

Before attempting this type of surgery we should be sure that the individual is in good health. The hemoglobin should be above seventy-five per cent. Hypertrophied tonsils should be removed. The sinuses and nasal cavities should be free from pus. These minor details help greatly in determining the success of these operations.

DISCUSSION

A MEMBER: Do you do this in one step?

DR. BOYNE, (closing): It depends upon the extent of the cleft into the hard palate. Usually it is done in one step unless it extends clear through the alveolar ridge. Then it is done in two steps, as I have mentioned. I follow it up with this extensive operation into the pharynx.

Statistics show where cleft palate surgery has been done in early infancy, the mortality is somewhat higher, compared with surgery done in older patients. The earlier the surgery is done, the more operations it necessitates, due to the fact that you are bound to have a partial or complete loss of your work.

Nurse (in insane asylum): "There's a man outside who wants to know if we have lost any male inmates."

Doctor: "Why?"

Nurse: "He says some one has run off with his wife."

—Annapolis Log.

AN ACCOUNT OF THE INFLUENZA*

As It Appeared in Philadelphia, in the Autumn of 1789, in the Spring of 1790 and in the Winter of 1791

BENJAMIN RUSH, M. D.,**

Professor of the Institutes and Practice of Medicine, and of Clinical Practice, in the University of Pennsylvania.

The latter end of the month of August, in the summer of 1789, was so very cool that fires became agreeable. The month of September was cool, dry and pleasant. During the whole of this month, and for some days before it began, and after it ended, there had been no rain. In the beginning of October, a number of the members of the first congress, that had assembled in New York under the present national government, arrived in Philadelphia, much indisposed with colds. They ascribed them to the fatigue and night air to which they had been exposed in traveling in the public stages; but from the number of persons who were affected, from the uniformity of their complaints, and from the rapidity with which it spread through our city, it soon became evident that it was the disease so well known of late years by the name of the Influenza.

The symptoms which ushered in the disease were generally a hoarseness, a sore throat, a sense of weariness, chills, and a fever. After the disease was formed, it affected more or less the following parts of the body: Many complained of acute pains in the head. These pains were frequently fixed between the eye balls, and, in three cases which came under my notice, they were terminated by abscesses in the frontal sinus, which discharged themselves through the nose. The pain, in one case, before the rupture of the abscess, was so exquisite, that my patient informed me, that he felt as if he should lose his reason. Many complained of a great itching of the eyelids. In some, the eyelids were swelled. In others, a copious effusion of water took place from the eyes; and in a few there was a true opthalmia. Many complained of great pains in one ear, and some of pains in both ears. In some, these pains terminated in abscesses, which discharged for some days a bloody or purulent matter. In others, there was a swelling behind each ear, without a suppuration. Sneezing was a universal symptom. In some it occurred not less than fifty times a day. The matter discharged from the nose was so acrid as to inflame the nostrils and the upper lip, in such a manner as to bring on swellings, sores, and scabs in many people. In some, the nose discharged drops, and in a few, streams of blood, to the amount, in one case, of twenty ounces. In many cases it was so much obstructed, as to render breathing through it difficult. In some there was a total defect of taste. In others, there was a bad taste in the mouth, which frequently continued through the whole course of the disease. In some, there was want of appetite. In others, it was perfectly natural. Some complained of a soreness in their mouths, as if they had been inflamed by holding red pepper in them. Some had swelled jaws, and many complained of the tooth-ache. I saw only one case in which the disease produced a coma.

Many were affected with pains in the breast and sides. A difficulty in breathing attended in some, and a cough was universal. Sometimes this cough alternated with a pain in the head. Sometimes it preceded this pain, and sometimes it followed it. It was at all times distressing. In some instances it resembled the chin-cough. One person expired in a fit of coughing, and many persons spat blood in consequence of its violence. I saw several patients in whom the disease affected the trachea chiefly, producing great difficulty of breathing, and, in one case, a suppression of the voice, and I heard of another in which the disease, by falling on the trachea, produced cynanche trachealis. In most of the cases which terminated fatally, the patients died of pneumonia notha.

The stomach was sometimes affected by nausea and vomiting; but this was far from being universal symptom.

I met with four cases in which the whole forc of the disease fell upon the bowels, and went of in a diarrhea; but in general the bowels wer regular or costive.

The limbs were affected with such acute pain as to be mistaken for the rheumatism, or for th break-bone-fever of 1780. The pains were mos acute in the back and thighs.

Profuse sweats appeared in many over th whole body in the beginning, but without affording any relief. It was in some instances accompanied by erysipelatous, and in four cases whic came to my knowledge, it was followed by mil ary eruptions.

The pulse was sometimes tense and quick, bu ldom full. In a great majority of those whom visited it was quick, weak and soft.

---

*A copy of an article, published in 1805, and taken from Medical Inquiries and Observations.

**Dr. Rush was one of the signers of the Declaration of Independence and at one time the Surgeon General of the Continental Army.

There was no appearance in the urine different om what is common in all fevers.

The disease had evident remissions, and the ver seldom continued above three or four days; ut the cough, and some other troublesome symp-ms, sometimes continued two or three weeks.

In a few persons, the disease terminated in a dious and dangerous typhus.

In several pregnant women it produced uter-e haemorrhages and abortions.

It affected adults of both sexes alike. A few d people escaped it. It passed by children under ght years old with few exceptions. Out of five d thirty maniacs in the Pennsylvania Hospital, it three were affected by it. No profession or cupation escaped it. The smell of tar and to-cco did not preserve the persons who worked in em from the disease, nor did the use of tobacco, snuff, smoking, or chewing, afford a security ainst it.*

Even previous and existing diseases did not otect patients from it. It insinuated into the ck chamber, and blended itself with every spe-es of chronic complaint.

It was remarkable that persons who worked in e open air, such as sailors, and long-shore-en, (to use a merchantile epithet) had it much orse than tradesmen who worked within doors. body of surveyors, in the eastern Pennsylvania oods, suffered extremely from it. Even the gor of constitution which is imparted by the vage life did not mitigate its violence. Mr. ndrew Ellicott, the geographer of the United tates, informed me that he was a witness of its fecting the Indians in the neighborhood of Ni-gara with peculiar force. The cough which at-nded this disease was so new and so irritating complaint among them, that they ascribed it to itchcraft.

It proved most fatal on the sea-shore of the nited States.

Many people who had recovered, were affected e second time with all the symptoms of the sease. I met with a woman, who, after recov-ing from it in Philadelphia, took it the second ne in New York, and a third time upon her re-rn to Philadelphia.

Many thousand people had the disease who ere not confined to their houses, but transacted usiness as usual out of doors. A perpetual coughing was heard in every street of the city. Buying and selling were rendered tedious by the coughing of the farmer and the citizen who met in market places. It even rendered divine service scarcely intelligible in the churches.

A few persons who were exposed to the disease escaped it, and some had it so lightly as scarcely to be sensible of it. Of the persons who were confined to their houses, not a fourth part of them kept to their beds.

It proved fatal (with few exceptions) only to old people, and to persons who had been previously debilitated by consumptive complaints. It likewise carried off several hard drinkers. It terminated in asthma in three persons whose cases came under my notice, and in pulmonary consumption, in many more. I met with an instance in a lady, who was relieved of a chronic complaint in her liver; and I heard of another instance of a clergyman whose general health was much improved by a severe attack of the disease.

It was not wholly confined to the human species. It affected two cats, two house-dogs, and one horse, within the sphere of my observations. One of the dogs disturbed his mistress so much by coughing at night, that she gave him ten drops of laudanum for several nights, which perfectly composed him. One of the cats had a vomiting with her cough. The horse breathed as if he had been affected by a cynanche trachealis.

The scarletina anginosa, which prevailed during the summer, disappeared after the first of October; but reappeared again after the influenza left the city. Nor was remitting fever seen during the prevalence of the epidemic.

I innoculated about twenty children for the smallpox during this prevalence of the influenza, and never saw that disease exibit a more favorable appearance.

In the treatment of the influenza I was governed by the state of the system. Where inflammatory diathesis discovered itself by a full or tense pulse, or where great difficulty of breathing occurred, and the pulse was low and weak in the beginning of the disease, I ordered moderate bleeding. In a few cases in which the symptoms of pneumony attended, I bled a second time with advantage. In all these instances of inflammatory affection, I gave the usual antiphlogistic medicines. I found that vomits did not terminate the disease, as they often do a common catarrh, in the course of a day, or a few hours.

In cases where no inflammatory action appeared in the system, I prescribed cordial drinks and diet, and forbade every kind of evacuation. I saw several instances of persons who had languished for a week or two with the disease, who were suddenly cured by eating a hearty meal, or by drinking half a pint of wine, or a pint of warm punch. In all cases of weak action in the blood-vessels, liquid laudanum gave great relief, not only by suspending the cough, but by easing the pains in the bones.

---

*Mr. Howard informs us that the use of tobacco is not a eservative against the plague, as has formerly been supposed; course that apology for the use of an offensive weed should t be admitted.

I met with one case of an old lady who was suddenly cured of her cough by a fright.

The duration of the epidemic in our city was about six weeks. It spread from New York and Philadelphia in all directions, and in the course of a few months pervaded every state in the union. It was carried from the United States to several of the West India islands. It prevailed in the island of Grenada in the month of November, 1789, and it was heard of in the course of the ensuing winter in the Spanish settlements in South America.

The following winter was unusually mild, insomuch that the navigation of the Delaware was not interrupted during the whole season, only from the 7th to the 24th of February. The weather on the 3rd and 4th days of March was very cold, and on the 8th and 9th days of the same month, the mercury in Fahrenheit's thermometer stood at 4 at 7 o'clock in the morning. On the 10th and 11th there fell a deep snow. The weather during the remaining part of the month was cold, rainy, and variable. It continued to be variable during the month of April. About the middle of the month there fell an unusual quantity of rain. The showers that fell on the night of the 17th will long be connected in the memories of the citizens of Philadelphia with the time of the death of the celebrated Dr. Franklin. Several pleurisies appeared during the month; also a few cases of measles. In the last week of the month the influenza made its appearance. It was brought to the city from New England, and affected, in its course, all the intermediate states. Its symptoms were nearly the same as they were in the preceding autumn, but in many people it put on some new appearances. Several persons who were affected by it had symptoms of madness, one of whom destroyed himself by jumping out of a window. Some had no cough but had very acute pains in the back and head. It was remarked that those who had the disease chiefly in the breast the last year, complained now chiefly of their heads, while those whose heads were affected formerly, now camplained chiefly of their breasts. In many it put on the type of an intermitting fever. Several complained of constant chills, constant sweats; and some were much alarmed b an uncommon blue or dark colour in their hand I saw one case of ischuria, another of acute pa in the rectum, a third of anasarka, and a four of a palsy in the tongue and arms; all of whic appeared to be anomalous symptoms of the i fluenza. Sneezing, and pains in the ears ar frontal sinus, were less common now than th were in the fall; but a pain in the eye-balls w a universal symptom. Some had pain in o eye only, and a few had sore eyes, and swellin in the face. Many women who had it, were a rected by an irregular appearance of the cat menia. In two persons whom I saw, the cou was so incessant for three days, nor could it composed by any other remedy than plentif bleeding. A patient of Dr. Samuel Duffield i formed me, after his recovery, that he had other symptoms of the disease than an efflo escence on his skin, and a large swelling in h groin, which terminated in a tedious abscess.

The prisoners in the jail who had it in t autumn, escaped it in the spring.

During the prevalence of this disease, I s no sign of any other epidemic.

It declined sensibly about the first week June, and after the 12th day of this month I w not called to a single patient in it.

The remedies for it were the same as we used in the fall.

I used bleeding in several cases on the secon third, and fourth days of the disease, where had appeared to be improper in its first sta The cases which required bleeding were far fro being general. I saw two instances of synco of an alarming nature, after the loss of ten oun of blood; and I heard of one instance of a b who died in half an hour after this evacuation

I remarked that purges of all kinds work more violently than usual in this disease.

The convalescence from it was very slow, a a general languor appeared to pervade the c zens for several weeks after it left the city.

The month of December, 1790, was extrem and uniformly cold. In the beginning of month of January, 1791, the weather moderat and continued to be pleasant till the 7th, on wh day the navigation of the Delaware, which h been completely obstructed by ice, was ope to admit of the arrival of several vessels. D ing the month of December many people co plained of colds; but they were ascribed wh to the weather. In January four or five pers ı a family were affected by colds at the same ime; which created a suspicion of a return of he influenza. This suspicion was soon conirmed by accounts of its prevailing in the neighoring counties of Chester and Montgomery, in ennsylvania, and in the distant states of Virinia and Rhode Island. It did not affect near o generally as in the former two appearances. here was no difference in the method of treatıg it. While the common inflammatory disases of the winter bore the lancet as usual, it vas remarked that patients who were attacked y the influenza, did not bear bleeding in a greatr proportion, or in a larger quantity, than in the wo former times of its appearance in the city.

I shall conclude this account of the influenza y the following observations:

1. It exists independently of the sensible qualies of the air, and in all kinds of weather. Dr. atrick Russel has proved the plague to be equal independent of the influences of the sensible ualities of the atmosphere, to a certain degree.

2. The influenza passes with the utmost rapidy through a country, and affects the greatest umber of people, in a given time, of any disease ı the world.

3. It appears from the histories of it which are on record, that neither climate, nor the different states of society, have produced any material change in the disease. This will appear from comparing the account I have given, with the histories of it which have lately been given by Dr. Grey, Dr. Hamilton, Dr. A. Fothergill, Mr. Chisholm, and other modern physicians. It appears further, that even time itself has not been able materially to change the type of this disease. This is evident, from comparing modern accounts of it with those which have been handed down to us by ancient physicians.

I have hinted in a former essay at the diminutives of certain disease. There is a state of influenza which is less violent and more local, than that which has been described. It generally prevails in the winter season. It seems to originate from a morbid matter, generated in crowded and heated churches, and other assemblies of the people. I have seen a cold, or influenza, frequently universal in Philadelphia, which I have distinctly traced to this source. It would seem as if the same species of diseases resembled pictures, and while some of them partook of the deep and vivid nature of mosaic work, others appeared like the feeble and transient impressions of water colors.

THE TREATMENT OF CHRONIC EMPYEMA THORACIS*

J. DEWEY BISGARD, M. D.,
Omaha, Nebraska.

Nearly all chronic empyemas have had a definite clinical history of antecedent acute infection f the pleural cavity and have progressed to ıronicity for the following reasons:

1. Failure to recognize the condition or delay in ıstitution of proper treatment.
2. Inadequacy of treatment as a result of failure secure adequate and dependent drainage of the npyema cavity.
3. Concomitant bronchial pleural fistulae.
4. The presence of foreign bodies in emypema ıvities.
5. Infections of the thoracic wall particularly osomyelitis of ribs, or of rib stumps infected as a sult of drainage operations.
6. Tuberculosis.

1. Delayed Treatment.

Since delayed and inadequate treatment of the ute infection is responsible for so many chronic npyemas, a discussion of the problem invites few statements relative to the diagnosis and eatment of the disease in the acute stage or, in her words, a few remarks regarding preventative therapy. With only a few exceptions should there be failure of early recognition of the possibility of an acute empyema. In the absence of x-ray facilities or if the roentgenograms of the thorax are inconclusive, the intelligent introduction of a large aspirating needle into the pleural cavity usually will provide evidence which will confirm or refute the suspicion of an empyema. Since this is such a simple procedure, and when properly performed, is associated with practically no danger, and yet yields such valuable information, there is no justification for procrastinating in doubt when empyema is suspected.

Empyema should be suspected upon much less evidence than that of the classical signs of a pleural effusion. These signs occasionally are wanting or inconclusive. This is particularly true of encapsulated or small collections of pus. Empyema should be given consideration in the differential diagnoses of every case with symptoms and physical signs referrable to an unexplained inflammatory process within the thorax and should be given serious consideration in cases of pneumonia with delayed resolution of signs and symptoms.

---

*Presented before the annual meeting, Nebraska State Medi-l Association, Lincoln, Nebraska, May 22-24, 1934.

No empyema should ever be drained without preliminary aspiration and bacteriological examination of the aspirated fluid and then should be drained only after the demonstration of pyogenic micro-organisms in the fluid, either in smear or by culture. In the absence of pyogens, the lesion should be considered tuberculous and treated as such with repeated aspirations until pyogenic bacteria have been found.

The author has adopted the following principles in the treatment of acute pyogenic empyemas. In cases in which the pus is thick and the mediastinum is fixed and in which there is no dyspnoea, open drainage is a safe procedure and the procedure of choice, and is therefore immediately established. If, however, the fluid is thin, or if there is considerable dyspnoea from a massive effusion with much displacement of the mediastinum, from unresolved pneumonia or from any other cause, open drainage is unsafe and the pleural cavity is emptied and kept partially so by frequently repeated aspirations until the fluid becomes thick and the dyspnea is relieved. If for some reason such as the presence of much fibrin clot, the pleural cavity cannot be decompressed satisfactorily by aspiration, and open drainage is unsafe, closed air-tight drainage is instituted as a temporary measure.

After the pus has become thick and the mediastinum has had time to become rigid and fixed, the dyspnoea has been relieved or the pneumonia has started to undergo resolution, a segment of rib is resected at the most dependent portion of the empyema cavity and a large thick-walled tube one-half to one inch in diameter is inserted so as to project just within the pleural cavity. Thus with open drainage thoroughly adequate and dependent, irrigations of the cavity are unnecessary and undesirable. The drainage tube should not be removed until the empyema cavity has completely closed about the tube. This can be determined by measuring the cavity periodically with a uterine sound and by determining the quantity of a mildly antiseptic fluid required to fill it.

2. Non-Dependent or Inadequate Drainage.

Under these circumstances, pus is retained within the empyema cavity and not only gives rise to deleterious systemic effects, but also impedes or prevents re-expansion of the lung. If this situation exists for a number of weeks, the visceral pleura forming the mesial wall of the abscess cavity becomes so densely fibrotic that it imprisons the lung and not infrequently permanently prevents its re-expansion. Since many of these cases will obliterate these empyema cavities with adequate dependent drainage even after carrying a large residual of pus for months the first step in the treatment of this group of cases is the establishment of dependent and grossly adequate drainage and its maintenance for a period of several weeks or months. Irrigations of the cavity with Dakin's solution and acetic acid may aid closure through chemical decortication. Hart has reported good results with hi method of tidal irrigation supplemented wit slight negative pressure. If the lung fails t re-expand, the cavity can be obliterated only b two surgical operative procedures. The first o these, decortication, is directed to freeing th lung from the restraining fibrotic pleural encasement. This is accomplished by stripping th pleura from the lung or by cross hatching it wit innumerable incisions. In general, this procedure is so uncertain as to accomplishment an result that it has fallen generally into disuse

The second group of procedures consists o plastic operations upon the thoracic wall designated as extrapleural and Shede thoracoplasties In principle, if the lung cannot re-expand to mee the thoracic wall, this wall must be collapsed sufficiently to meet the lung and thereby obliterat the empyema cavity. The thoracic wall is collapsed by removing the ribs overlying the cavity and this is accomplished whenever feasible b the extrapleural operation, divided usually int multiple stages. By means of extrapleural collapse, a large cavity can be reduced to a sma one without entering the pleural cavity. Fina obliteration and cure is then accomplished by small Shede operation, supplemented by plasti closure in which the defect is filled after it ha become relatively sterile with a pedicle graft muscle and the skin approximated over it, or th floor is covered with skin grafts. The Shed thoracoplasty alone is used to obliterate sma empyema cavities. In performing a Shede thoracoplasty, it is very important to completely unroo and saucerize the empyema cavity and to reva cularize the fibrotic visceral pleura which forn its bed.

3. Bronchial Pleural Fistulae.

Bronchial fistulae delay or prevent closure empyema cavities because they continually rei fect them and because they minimize the impo tant influence of intrapulmonary pressure in r expanding the lung. These fistulae may clo spontaneously after the establishment of adequa dependent drainage in cases in which this h een wanting. Often they can be closed by aplying slight constant negative pressure to an airight drainage system. If these methods fail fter they have been given an adequate trial, the horacoplastic operations described above must be esorted to. The fistulae which are then widely xposed may be closed occasionally by applications of 40% silver nitrate to the bronchial muosa of the mouths of the fistulae, or if this fails. y covering them with a pedicle flap of muscle.

4. Foreign Bodies.

In empyemas following traumatic wounds of he chest, foreign bodies may have been deposted and remain resident in the pleural cavity. Occasionally drainage tubes slip into the thorax nd are lost in the empyema cavity without the nowledge of those in attendance. Where the esponsibility of dressings is shared by two or more attendants, this accident can readily occur. The cavity will close only after these substances have been removed. Since many of them are non-radio opaque, they are discovered only after he empyema cavity had been widely exposed in he course of a plastic operation.

5. Infections of the Thoracic Wall.

Osteomyelitis of a rib or infected soft tissues may maintain not only a persistent cutaneous inus, but if drainage through this sinus is adequate, the pus may push inward and be responsible for maintenance of a chronic empyema cavty. The infection of the rib may be either tuberculous or pyogenic and may be primary or much more frequently is a sequel of drainage. These nfections take origin not only in the costal tumps which have been exposed by rib resection, but may occasionally develop subsequent to intercostal drainage. Resection of the involved soft issues or costal segments usually results in a prompt cure.

6. Tuberculous Empyema.

Tuberculous infections of pleural cavities almost always run chronic courses. From the point of view of etiology, treatment, and prognosis, hey fall into two distinct groups, the pure tuberculous infections and the mixed infections. In the latter group, the pleural cavity is infected not only with tubercle bacilli, but also with pyogenic micro-organisms.

For purposes of the discussion of treatment, these two general groups have been sub-divided.

1. As regards the condition of the lungs:
   (a) Associated with the empyema there may be active pulmonary disease, or,
   (b) Total absence of demonstrable pulmonary lesions.
2. As regards related circumstances; tuberculous empyemas may develop:
   (a) Spontaneously as a result of hematogenous or lymphatic spread or of rupture of a tuberculous pulmonary cavity into the pleural cavity, or they may develop
   (b) In a pneumothorax space which has been artificially induced and maintained for treatment of a pulmonary lesion.

Pure tuberculous empyemas never should be drained. Drainage invariably superimposes a pyogenic infection which greatly increases the morbidity and mortality. It is my opinion that in every case in which the lung field is obscured by fluid regardless of its nature, that most of this fluid should be removed promptly by aspiration and the pleural space maintained by partial air replacemennt. By this initial thoracenteses the lung is re-expanded and left unobscured so that an immediate roentgenographic study of the chest often elicits the all important data concerning the condition of the underlying lung. If there are no demonstrable active pulmonary lesions, we are concerned only with the treatment of the pleural infection, but if there is demonstrable active parenchymal disease, collapse of the lung should be secured and maintained preferably by the introduction of air or oil. If adequate collapse cannot be obtained by pneumothorax or oleothorax, either phrenicectomy or thoracoplasty or both should be resorted to to gain the desired compression, providing that these measures are not contra-indicated.

Tuberculous effusions developing during the course of pneumothorax therapy should be removed by aspiration as rapidly as they form. otherwise the pleural space may be obliterated as a result of an obliterative pleuritis and an effective pneumothorax lost before the lung has healed.

Many tuberculous empyemas are cured by repeated aspirations. Good results have been reported from the instillation of certain antiseptic solutions and particularly from the replacement of the aspirated fluid with gumenol, a mildly antiseptic mineral oil. If these procedures fail to dry up these pure infections, or if there is a large cavity in the underlying lung, an extensive extrapleural thoracoplasty often brings about a cure.

If the empyema is a mixed infection, both tuberculous and pyogenic, and is running a mild course, it may be treated by repeated aspirations or by oleothorax. In most instances, however, the infection is so severe that closed or open drainage must be instituted promptly. If the cavity fails to obliterate with adequate and dependent drainage, and most of them fail, they are treated by the same plastic operations used in the treatment of chronic non-tuberculous empyemas as described above.

ARTIFICIAL IMPACTION OF FRACTURES IN THE NECK OF THE FEMUR*

HERMAN F. JOHNSON, M. D., F. A. C. S.,
Department of Surgery—Fracture Division,
University of Nebraska—College of Medicine,
Omaha, Nebraska.

In the consideration of hip fractures, a sharp distinction must be made between the central or transcervical type and those through the base of the neck or intertrochanteric region. Either type occurs commonly in elderly persons, but may be found in any age period. They comprise approximately 40% of femur fractures and the intertrochanteric, fortunately, are about twice as frequent as the central type. About 60% occur in women.

The Whitman abduction treatment(1) has been almost universally accepted as the method of choice in handling the problem, but even this has not adequately reduced the number of non-unions occurring in the neck fractures. Smith-Peterson(2) in recent years has advocated open reduction and nailing of the fragments with his special flanged nail, but this is rather a formidable procedure in the hands of the ordinary surgeon. 75% of bony unions have been reported in a limited number of cases by this method. Increased periods of fixation have also improved the end results, so that at the present time, 16 weeks of immobilization in plaster followed by protection in a walking caliper brace until x-ray examination discloses firm bony union gives in the more robust elderly patients a good chance for satisfactory function. In the intertrochanteric fracture, union takes place with any type of treatment, but if deformity and shortening is not corrected, functional disability will be present to a variable degree. Here healing takes place quite rapidly—within eight to ten weeks—but weight bearing should be guarded and gradually increased over a period of six to eight weeks after fixation is discontinued.

Failure of union is generally accepted as being due to impaired blood supply to the proximal fragment and atrophic changes present in senile bone. Intra-capsular fractures also have the broken surfaces bathed in synovial fluid which is considered a factor in non-union in any region. In our opinion, the chief cause of non-union is due to incomplete, close apposition of the fragments until firm bone is laid down.

Having experienced the too frequent disabling, fibrous union in spite of adequate treatment and finding that all impacted fractures have united satisfactorily when protected for 12 to 14 weeks, we were led to attempt artificial impaction of these neck fractures, as advocated by Cotton(3) as early as 1911. Cotton puts it simply: "If unimpacted hip fractures fail of union and do badly while similar impacted fractures do relatively well, then why not impact." In 1927(4) he gives a more detailed report of his method and end results. His procedure is carried out by manual traction under anesthesia, moderate abduction and internal rotation. Impaction is then accomplished by a series of slow blows on the felt protected trochanter with a large seven pound wooden mallet. He advocates plaster fixation for 10 to 12 weeks, followed by a convalescent splint. 75% of his patients have obtained bony union by this method, and the remaining have a close fibrous union with a serviceable extremity.

Accurate approximation of fragments always encourages bony union and when this is carried to the stage of impaction, healing is further assured. Smith-Peterson in his description of the operative technic for internal fixation of this fracture by his special nail, states that impaction of the fragment is extremely important and has a special tool, "the impactor", which fits over the head of the nail, transmitting the force of the blow to the femur just below the greater trochanter, thus closely approximating the fragments.

Campbell(5), in a review of 304 fractures in the region of the neck, 157 of which were central, mentions artificial impaction as an adjunct to the abduction treatment and employed it in several of the cases reported.

If impaction can be demonstrated by a blow to the trochanter after the fracture has been completely reduced, it would seem that this less radical method of meeting the situation is the desirable one. We have used artificial impaction as an adjunct to the Whitman abduction treatment in six cases, five of which enough time has elapsed to state definitely that bony union has been obtained with surprisingly good functional result. The sixth case has been under treatment during the past 16 weeks, the plaster having just been removed, and x-ray examination of the hip at this time shows surprisingly firm union with definite bone trabeculation extending across the fracture line. During the same period of time, five cases f the same relative age period have been treated y the Whitman method alone, and two non-nions have occurred. In every instance, fixaon in plaster was carried out for 14 to 16 weeks fter obtaining anatomic reduction as shown by heck-up x-ray examination at time of reduction nd later through the cast.

---

*Presented at the meeting of the Omaha-Douglas County Medical Society, January 23, 1934.

Our routine procedure has varied very little n all cases. When the patient is first seen, skin raction and suspension in a Thomas splint in bduction is done. We find that patients with ip fractures have less reaction and especially less ifficulty with distention and ileus if handled n this preliminary way for three or four days. When the condition of the patient is favorable, emoval to the x-ray and plaster room is accomlished with traction always maintained. Preparaion is then made for a double hip spica, the paient carefully lifted to the fracture table and the osition of extreme abduction, internal rotation, nd slight hyper-extension of the thigh obtained. Traction is by mechanical means rather than nanual. If good preliminary narcosis has been btained by morphine and scapolamine, no genral anesthesia is necessary during this procedure; lthough a small amount of gas is desirable in nost instances. Check-up x-ray is then made beore impaction and application of the cast. If he position is satisfactory, and that means anaomic or nearly so in this type of fracture, with light over-correction of the angle between the neck and shaft, so that a degree of coxa valga exists. impaction is accomplished by the use of a ong sand-bag weighing from ten to fifteen ounds. The opposite side of the pelvis is securely held by an assistant, while the operator tands over the patient, striking several firm lows to the lightly padded trochanteric region.

The carefully padded plaster cast includes the ower trunk to the margins of the lower chest nd over the foot on the fractured extremity and o just above the knee on the well leg. The traction straps used at the first set-up are cut off at he level of the ankle and turned back over the edge of the cast at the lower leg before the foot portion is applied. This gives slight fixed traction, especially if the cast fits well around the tuberosity of ischium and at least increases the fixation.

It is important during the long period of immobilization, that good nursing care be had at all times. Adequate nourishment and special attention to fluid intake is essential. Cod liver oil or Haliver oil combined with a diet high in calcium is of value. The patient should be turned at least once each day, spending several hours in the prone or lateral position.

The length of complete fixation has been increased from 12 to 16 weeks, which apparently is an important factor in improving our results. A well-fitting walking caliper with very guarded increasing weight bearing should be worn until the x-ray shows firm bony union with the femoral head restored to the same density as the base of the neck and trochanter indicating that it is alive and vascular. This generally requires at least an additional six to nine months.

Our small group is reported here to encourage this method of treatment, which apparently has received too little attention in spite of the very simple procedure. In all cases we have been able to demonstrate impaction of the fragments by check-up x-ray taken either before application of the cast or a few days later. The patients in this group are relatively young, varying in age between 40 and 65 years; but, as pointed out by Heyman(6), the highest percentage of non-unions in his series of 70 cases occurred between the ages of 40 and 50 years, so we feel that our group represents a fair average and not selected as being particularly favorable for union. The two patients in the non-impacted series who developed non-union were both in their forties. They obtained fair functional results by the Whitman reconstruction operation. We do not anticipate 100% unions in a large series by this method, but feel confident that the percentage will be considerably higher than the present 60% to 70% by the abduction treatment alone.

CASE REPORTS

CASE I

Miss B. H., age 59: This patient was referred by Dr. Warren Thompson on January 11, 1932, having sustained a trans-cervical fracture of the left hip four days previously. Our procedure of reduction on the fracture table with marked abduction and internal rotation was done under gas-ether anesthesia. Check-up x-ray disclosed satisfactory reduction, following which impaction was performed as already described. Films following this maneuver disclosed definite impaction of the fragments in good position. Her course was uneventful, the double hip spica remaining in place until April 25, 1932 (14 weeks). A well fitting caliper was then applied and within two weeks, she was permitted up on crutches.

Final x-ray examination on January 24, 1933, disclosed good bony union with considerable absorption of the neck and some irregularity of the head. When examined in November, 1933, two years after the original injury, she was walking with a slight limp, but did not require a cane. Motions of the hip were approximately three-fourths normal, while knee flexion was possible to 110 degrees. The functional result in this case has been very satisfactory with approximately one-half inch shortening, due to the neck absorption which took place before bony union occurred.

CASE II

Mrs. G. S., age 46: This patient sustained a trans-cervical fracture of the left hip on January 23, 1932, and was seen within an hour after the injury. Diagnosis of the lesion had been made by Dr. Francis Heagey. She was handled in a preliminary way by skin traction and suspension in a Thomas splint and four days after fracture, placed on the fracture table and the extremity immobilized in a double hip spica in 45 degrees abduction, following artificial impaction. Check-up films were taken both before and after impaction, and the desired result was quite evident. Two months later, a single hip spica cast was applied, at which time x-rays disclosed beginning union in very satisfactory position. On June 2, 17 weeks following injury, plaster fixation was discontinued and she was placed in an abduction caliper brace, at which time x-rays showed union taking place with moderate absorption of the neck. She was permitted up on crutches with no weight bearing at that time.

Due to persistent limitation of motion in the knee, this was forcibly manipulated under gas anesthesia on September 3, 1932, following which physiotherapy treatments were given and considerable increase in motion obtained.

When last examined on December 7, 1933, the x-rays disclosed satisfactory bony union with slight absorption of the neck. She at that time was walking without a cane and only a slight limp. Knee motions were approximately 60% normal, while hip motions were 90% normal. This patient is carrying on actively as a school teacher.

CASE III

Mrs. N. W., age 45 years: This patient was seen by me on June 3, 1932, having been referred by Dr. Stanley Reed. On May 21, 1932, she fell several steps, sustaining an injury to the left hip and elbow. She was immediately hospitalized and a fracture dislocation of the elbow reduced by Dr. Reed. X-rays of the left hip disclosed a fracture of the neck of the femur in the trans-cervical region. This was handled by skin traction and Thomas splint suspension. At the time of our consultation, x-rays disclosed quite satisfactory position, and it was decided to place her in a Whitman abduction cast, which was carried out on June 6, 1932. After placing her on the fracture table in the position of 30 degrees abduction, internal rotation and slight hyper-extension of the thigh, check-up film was made, which disclosed anatomic position. Artificial impaction was accomplished by striking the trochanteric region with a heavy sand bag. X-ray examination through plaster two days after this maneuver revealed definite impaction of the neck. Her progress was very satisfactory, the plaster remaining in place for a period of 16 weeks. She was then placed in a walking caliper brace, which was worn for two months.

Examination on November 17, 1933, approximately one and one-half years after injury, disclosed our patient walking with a very slight left limp, motions of the hip being approximately 75% normal and her chief difficulty being in knee flexion, which was limited to 145 degrees. X-ray examination at this later date shows firm bony union and a viable head. We are quite sure that this patient will continue to improve, and her knee motions have increased considerably after a period of physiotherapy.

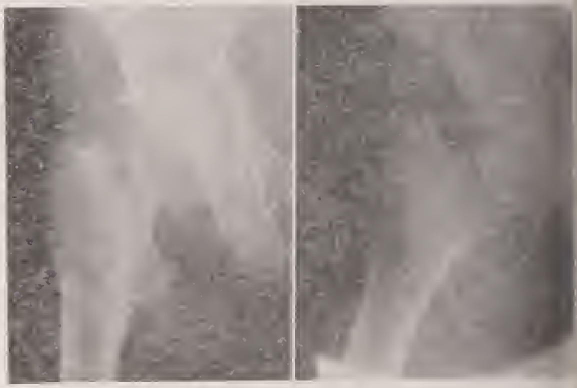
CASE IV

Mrs. H. W., age 64. This patient was first seen on March 14, 1932, when she sustained a trans-cervical fracture of her left hip. The method of treatment already described was followed out with plaster fixation for sixteen weeks. Five months after injury, only a caliper was used for support. She then was able to walk very nicely without the aid of crutches. Nine months after the injury (December, 1932), the caliper was discontinued and she was permitted active weight bearing.

In December, 1933, she was walking without a limp; hip and knee flexion was possible to less than 90 degrees, and there was no measurable shortening X-rays disclosed a dense column of bone extending across the inferior half of the neck, with little evidence of the usual early bone absorption.

CASE V

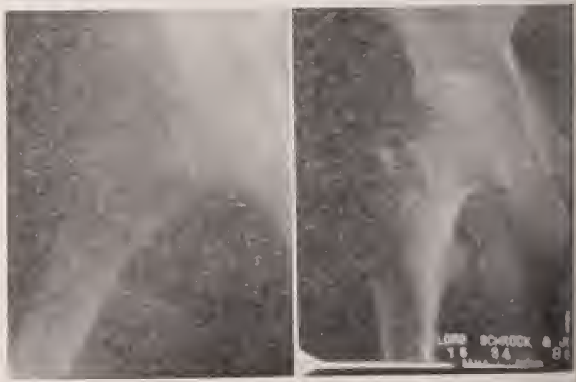
Mr. F. M., age 41 years. This is the only male in the group and was handled throughout by Dr. H. H Avery, excepting for our assistance at time of the reduction, impaction and application of cast. On January 18, 1933, he fell on a slippery walk, and the clinical findings verified by x-ray disclosed a typical intra-capsular fracture of the right femur (Fig. I (A)) 24 hours later, artificial impaction was performed after x-rays disclosed perfect apposition of fragments with slight coxa valga (Fig. I (B) and Fig. II (A)) The double hip spica was tolerated well for 16 weeks and recumbency without fixation for an additional 4 weeks. Examination exactly one year after injury shows a 100% result (Fig. III). The final x-ray film discloses an unusual amount of bone trabeculation extending across the fracture line with no shortening of the neck (Fig. II (B)).



A FIG. I B

Fig. I (A): X-ray of case V, showing typical trans-cervica fracture with outward rotation of the lower fragment so tha neck of femur appears shortened.

Fig. I (B): Check-up film after reduction and before impac tion. The true length of the neck is now evident after interna rotation to the point where the lesser trochanter is not visible Slight over-correction or coxa valga is also noted.



A FIG. II B

Fig. II (A): X-ray film after impaction. The fracture lin is hardly visible and the neck appears slightly shorter than be fore impaction.

Fig. II (B): Final check-up x-ray one year after fracture A dense column of bone extends across the inferior one-half o the neck with the trabeculations almost vertical, indicating ver firm union.

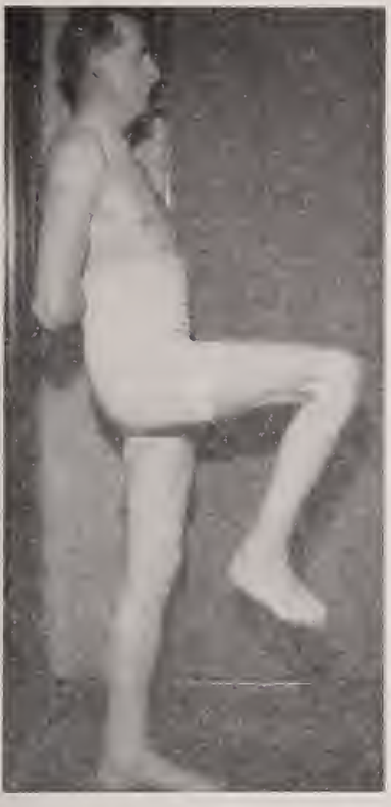


FIG. III

Fig. III: Photograph of cave V one year after injury, indicating range of flexion in hip and knee. He is working full time as a janitor and painter.

CASE VI

Mrs. E. C., age 62 years. This patient is just out of her plaster and the x-ray film 16 weeks after reduction already shows evidence of bone trabeculation across the fracture line. One can predict even at this early date that bony union will take place and her functional result should be excellent, as within a week she is able to actively lift her limb from the bed and knee flexion is possible through thirty degrees.

This patient has received most excellent nursing care with a diet carefully checked for high calcium content and regular doses of haliver oil and viosterol.

SUMMARY

1. Accurate and close apposition of fragments to the stage of impaction favors union.

2. Slight over-correction or coxa valga is desirable.

3. Fixation in 45 degrees abduction, internal rotation and slight hyperextension is carried out for 16 weeks.

4. A diet high in calcium, reinforced by haliver oil and viosterol is of value.

5. A well-fitting caliper brace with guarded weight bearing until x-ray examination shows definite trabeculation across the fracture line is recommended in all cases.

BIBLIOGRAPHY

1. Whitman: Annuals of Surgery, November, 1902.

2. Smith-Petersen: Intra-capsular Fractures of the Neck of the Femur, Archives of Surgery, Vol. 23, November, 1931.

3. Cotton: Artificial Impaction in Hip Fractures. American Journal of Orthopaedic Surgery, Vol. VIII, No. 4, 1911.

4. Cotton: Artificial Impaction in Hip Fractures. Surgery, Gynecology and Obstetrics, Vol. XLV, No. 3, 1927.

5. Campbell: Fractures in Neck of Femur. Minnesota Medicine, Vol. XV, No. 10, 1932.

6. Heyman: Fractures of the Neck of the Femur. Ohio State Medical Journal, Vol. XXVIII. No. 8, 1932.

POSTOPERATIVE CARE*

H. S. ANDREWS, M. D.,
Minden, Nebr.

Having had several years of experience as a so-called rural surgeon, operating in the homes with as good results as the average surgeon in a hospital, and having had a variety of nursing help, I have accumulated a series of diversified opinions as to what has been taught regarding the postoperative care of a patient. From these different institutional traditional routine procedures I have formed my own ideas as to what constitutes proper postoperative care.

The reason for this paper is that the writer, in visiting various hospitals throughout this country and on the European Continent, has noticed a great deal of difference in the postoperative care of patients, and that the end-results and mortality rates of these different institutions are in direct relation to the common-sense method in the care of their patients. Many a cleverly performed surgical operation has proved fatal through bungled after-care, and many a bungled operation has resulted in a brilliant recovery through skilled and efficient after-care. Many surgeons are indifferent to what becomes of their patients after they leave the operating table. Often the patient's life has to be fought for after surgery, and careless, indifferent, or inadequate care only helps to make the loss complete.

A surgeon's responsibility does not stop when the dressings are applied at the operating table. The success of many surgeons is due to their efficient nursing staff and not to their clever operations. Fortunately, many surgical procedures require no special after-care.

---

*Read before the Adams County Medical Society.

The majority of the postoperative treatment should start preoperatively. One cannot start in the surgery with preoperative treatment. A proper preoperative regime will greatly simplify postoperative convalescence. Preoperative care starts with a complete diagnosis. The crown, therefore, belongs upon the diagnostician's head, whether surgeon or physician.

The majority of surgeons, taken as a whole, are not creditable diagnosticians. Too many diagnoses are made after the surgeon starts to operate. If time will permit, every surgical procedure should be thoroughly outlined before the patient enters the operating room, and the surgeon himself should make some of the examinations. The busier the surgeon, the less chance he has to come in contact with his patient before operating, and the larger the institution, the more distant the relationship between him and his patient. The operator who does nothing but operate, who lets someone else make his diagnoses and still someone else do the after-care of his patients, knows but little of their welfare. The success of many surgeons in small institutions is not always due to the brilliancy of their work, nor the dexterity of their hands, but is largely due to the perfect confidence placed in them by the patients, who feel that the surgeon knows them personally, is human, and has a heart.

Preoperative examinations, carried to the extent of exhaustion, are to be avoided. Some preoperative examination, such as the examination of the heart, kidneys, lungs, etc., must take place before the patient enters the operating room. A patient should not be hospitalized a long time before going to surgery. Here is where the general practitioner can play an important role in preparing his patient before sending him to the hospital. If the operation is not an emergency and there are two or three days in which to get ready before going to the hospital, there are a few set rules that the writer has his patients observe in order to make their postoperative time more comfortable. If the patient is constipated, the bowels should be thoroughly cleansed for two or three days before going to the hospital. The patient should have proper rest, physically and mentally, and should be properly instructed in personal hygiene. The diet should be nutritious, regardless of the kind of operation to be done. If an intra-abdominal operation is to be performed, there are a few things about the diet that the writer has found should be carefully observed. All fried or greasy foods, all fruits, and anything containing vinegar should be avoided. The only vegetables to be taken for two days before going to surgery should be potatoes and these should be boiled or baked. Beef or chicken is allowable. Macaroni, spaghetti, egg-white, milk, cereals of all kinds that have no excess of bran, and plenty of clean white sugar, or simple white syrup, if it can be tolerated, are also suggested. If the bowels do not move the day before going to the hospital, an enema should be given. The patient should be instructed to drink as much plain water as possible. If he enters the hospital the night before going to surgery, his evening meal should be nothing more than tea and white-bread toast. After he enters the hospital, his care should be superintended by the surgeon. The nursing staff or special nurse should be chosen because of their cheerfulness and ability to inspire confidence in the patient. Here is one place where I think the rotation of nurses on cases is not conducive to the welfare of the patient. The surgeon should also see that the patient has a good night's rest before proceeding to the operating room. Even artificial sleep is better than none at all. A dose of luminal or amytal will not be out of line, if the patient is nervous and has a good heart. The patient should also drink plenty of water, an enema should be given before he goes to sleep, and the field of operation should be completely prepared the evening before operation.

Spectacular good results of emergency operations, where the preparing is done on the operating table, has had a tendency to make surgeons careless about preoperative preparedness of selected cases. Where a very sick patient is brought to the hospital for diagnosis, he may be made a fairly safe risk, if certain procedures are carried out with precision before rushing into an operation. If it is a hemorrhage case with a low hemoglobin, intravenous glucose or simple saline will help bring it to normal, provided the hemorrhage has been arrested. Blood transfusion, of course, is the ideal treatment. Intravenous acacia is good treatment, although some men claim that they have had bad results from using it preoperatively. The blood sugar should be estimated, if there are signs of starvation, and the sugar tolerance determined. The history of all patients should be thoroughly investigated to determine whether they have been exposed to any contagious diseases that might affect the glandular system or lungs, for it would be quite embarrassing to have a patient break out with scarlet fever, for instance, after having been operated upon for some chronic ailment. If an operation on the genito-urinary tract is to be done, the kidney output should of course be thoroughly known. If a biliary type of operation is to be performed, the phenoltetra-chlorphthalein test will be very helpful to determine the activity of the liver cells. Also, the coagulation time and the bleeding time should be taken as surely as would be done before a tonsillectomy. The patient should be thoroughly examined for any skin infections. Any suspicion of a rale or consolidation in the chest should warrant an x-ray before an anaesthetic is given. Mouth infections should be eliminated, if possible. In gastric operations, the stomach should be absolutely empty and thoroughly antisepticised before going to the operating table. Too many times have I noticed on preoperative charts that the patient's stomach was lavaged with soda or borated solutions, when we all know that, due to the hydrochloric acid content, people with perforated gastric ulcers seldom die, because the stomach lining is usually aseptic. Therefore, the stomach should be lavaged with a solution of hydrochloric acid. Gastric cases should also have antitetanus serum administered before operation because in surgery the best postoperative treatment is prophylaxis.

The operating table should be padded to fit the soft parts. The majority of the patients, of course, are in the supine position, and a small pad, placed under the lumbar region, will save a great deal of postoperative backache. If a gall-bladder or a kidney-lift on the table is to be used, it should be well padded. There should be no sudden change of position while the patient is under the anaestheic. When the patient is lifted off the table, great care should be taken not to allow the head, back, legs, or arms to dangle. In my operating room is a fanned draw-sheet across the table and under the patient, which makes an excellent means for lifting him off. Great care should be taken not to throw nor to roll the patient into his bed. Unless contra-indicated, the patient should be placed on his right side with the head forward and downward, so that if he emits, the vomitus can drain out the mouth and throat.

In the surgery, prevention of postoperative complications may be attained by speedy and precise operative manipulations with no rough handling, no unnecessary explorations, and a certainty of hemorrhage control. And it is just as important that the surgeon be in absolute control of himself. Forced inhalation of carbon dioxide, after removing the mask, will avoid atelectasis and many so-called postoperative pneumonias. If ether is the anaesthetic, atropine should have been administered before coming to the surgery, the average dose being 1/150th of a grain. Also, about 1/8th grain of morphine, given one hour before coming to the surgery, will lessen the amount of ether used and make it much easier for the patient to become unconscious from the ether gas.

In intra-abdominal work, thoroughly packing of the operative field with dry gauze, placed there *once and not retouched,* will prevent a lot of postoperative adhesions, according to Crossen of St. Louis and Percy of Los Angeles. If surgeons who use the gridiron incision for an appendectomy would check up on the number of right inguinal hernias on their male patients within five years postoperatively, as against those in whom they used the right rectus incision, the gridiron incision would become a thing of the past. On the operating table, if at all possible, the patient's body should be kept warm with comfortable covers, exposing only the field of operation. The restraints on the operating table should be well padded and movements under the exciting stage of ether prevented so far as possible.

After the patient is in bed either a proctoclysis, hypodermoclysis, infusion, or transfusion should be administered, according to the indications at that time. Water by mouth should be withheld until there is a certainty that the patient will retain it. For the first three days, this water should be as hot as the patient can take, if the type of operation is such that the peritoneum has been touched. This is one of the writer's standing orders. I have tested this water temperature on a series of patients until I am thoroughly convinced that the so-called "gas pains", which occur postoperatively following intra-abdominal operations, are caused by the ingestion of cool drinks or fruit juices too soon after the operation, as well as by the rough handling of the peritoneum. I have talked to numerous internes in different hospitals in the larger cities of America and on the European continent, and during the various conversations have been asked hundreds of times, "How do you doctors treat distention and gas pains in your laparotomies?" On inquiry, I found that in the majority of these hospitals there was a standing order which allowed the patients to have cold or ice-water as soon as they were awake. Gas pains are *preventable.* I have not seen a case for several years. Morphine, unless absolutely contra-indicated, should be administered hypodermically as soon as the patient recovers from the anaesthetic sufficiently to move about, and in adequate dosage to insure two to four hours of rest, so as to insure complete orientation when he finally awakens.

If everything goes well, postoperative treatment is a matter of leaving the patient undisturbed, except for the giving of hot water, for the first forty-eight hours, when he may have a little hot, weak tea, without sugar, and some clear broth. Sixty hours, postoperatively, he should receive either an enema or a mild cathartic, which should be followed by a light, soft diet. This regime we carry out in both clean and infected operative cases. In a clean case, the dressings are untouched for the first seventy-two hours and are then inspected every forty-eight hours. In a drainage case, the dressings are changed according to the exigencies of the case. Here again, careful handling is necessary to prevent any postoperative complications. Adhesive plasters should never be torn off of the patient, thereby making the dressing procedure a horror. In clean cases, it is easy enough to apply sufficient dressings and strips of adhesive tape to make a solid splint across the abdomen. When the first dressing is done, this adhesive is split from top to bottom and laid back and the soiled dressings removed. Then by reinforcing these cut edges with a narrow strip of adhesive, small holes are made in this strip with a pair of scissors and the adhesive laced together across the new dressings. In drainage cases, strips of adhesive with eyelets in the reinforced ends are so placed that strips of bandage or tape can be used to tie the dressings in place. These adhesives are left on indefinitely.

In all operations of the abdomen or chest, binders are placed over these to keep the soft parts splinted. In breast operations, the arm is placed on a splint at right angles to the body and kept thereon until the patient can voluntarily move it. On throat operations a stiff, collar-like dressing is applied to prevent excessive muscle contractions or rotation of the head. On the extremities, proper splintage to prevent the movement of the soft parts as well as of the bony structure, should be used and the limb should swing free from the bed in a Balkan frame. Rectal work requires that the bowels should have been thoroughly cleansed before going to surgery, thus preventing a bowel movement for at least four days. The first movement, thereafter, should be induced by an oil enema. Sitz baths, following major rectal work, do very well for some patients. Most postoperative treatment becomes preoperative treatment, if the necessary procedures are properly done in a reasonable and common-sense way.

A patient should never be left alone while under an anaesthetic. Until he is thoroughly awake, he should be watched by a doctor or a properly trained nurse rather than to be entrusted to the care of someone unable to properly recognize a sudden change of pulse, color, or respiration. No two patients recover from an anaesthetic in the same way. It is the rule rather than the exception that some degree of nausea and vomiting will follow general anaesthesia. It generally occurs suddenly and before the return of full consciousness, and as a rule lasts only a short time, leaving the patient conscious or ready to fall into a quiet sleep. Unless the case has been an emergency, the stomach will have been emptied before going to the surgery and there will be very little vomitus. If the patient persists in vomiting, in spite of the fact that morphine has been administered and consciousness has been regained, the lavaging of the stomach with a solution of soda bicarbonate will relieve it in a number of cases. The withholding of all fluids by mouth until nausea has ceased should be the rule, except to lavage the stomach. If the operation has been on the stomach, then a Levine tube should be inserted and the stomach irrigated. Sometimes morphine alone will nauseate the patient, but this should be recognized by the fact that the preoperative administration of the narcotic also produced nausea.

Postoperative thirst is best overcome by some other means of administration of fluids than by mouth. Postoperative restlessness without pain can be easily handled by phenobarbital or bromides. Postoperative wound pain is generally produced by the stay sutures being too tight, badly applied splints, unnatural or strained position, undue restlessness, or too tight dressings and bandages. If postoperative wound pain occurs after forty-eight hours, or if the postoperative temperature stays up over thirty-six to forty-eight hours, the wound should be investigated for fear of infection. Such infections are best treated preoperatively by the surgeon himself investigating occasionally the method of preparation of his armamentarium in the operating room. If morphine has been administered postoperatively for pain, after the first twenty-fours any subsequent hypodermic of morphine should be gradually lessened in amount until, if possible, there is none administered after sixty hours. Postoperative headaches should be thoroughly investigated, and the treatment should be directed to the elimination of the cause rather than to the giving o hypnotics. Postoperative singultus as a rul will not occur unless the patient has been anaesthetised with food in the stomach, or unless th intestinal tract contained more material than i should, or if the operation was such that th phrenic nerve had been traumatized. This condition is best treated by using large doses of luminal or chloral hydrate administered per rectum. Cases of singultus may become so severe as to require treatment by intubation, the same as for edema of the larynx. Postoperative hematemesis, in cases not involving gastric procedures, can usually be controlled by stomach lavage, but if it follows a stomach operation, a re-entry to the point of hemorrhage should be made. Postoperative hemorrhage should be halted by ligature or clamp after exposing the bleeding point, if possible, and blood transfusion used, if necessary. If transfusion cannot be done and the bleeding is internal and difficult to locate, a tourniquet applied to each limb with sufficient pressure to cut off the venous and not the arterial circulation, will reduce the blood-pressure to the extent that hemorrhage will stop. When these tourniquets are released, it should be done gradually.. If the bleeding has been enough to produce syncope, but has been arrested, lowering the head and bandaging the limbs from extremity to body will sufficiently establish circulation in the central nervous system to carry on life until an infusion or transfusion can be done. Postoperative sweating is a fine thing, provided the patient is kept warm. The room, bed, and bedclothes, in all post-anaesthetic cases, should be warmer than is comfortable until the patient is wide awake. This will prevent a great deal of postoperative bronchial irritation. Another way, is to encourage the patient to breathe deeply with the mouth open, on first awakening. For the first twenty-four hours, atropine should be administered with every third·or fourth dose of morphine.

Postoperative shock is not always differentiated from postoperative hemorrhage. This is a condition sometimes encountered on the operating table, such as in long operations or in faulty general or spinal anaesthesia, and should be treated preoperatively by knowing the reserve forces of the patient. During the operation, undue trauma, lowering of the body temperature, or neglect of the preoperative measures heretofore mentioned, will expose the patient to surgical shock, which, if it occurs, is best combatted by intravenous use of adrenalin or ephedrin and atropine. These must not be administered, however, if bleeding exists.

Camphor in oil and caffeine-sodium-benzoate are also good. Fluids, intravenously, should not be neglected. The patient should be put in a Trendelenburg position and the tension of the blood raised before continuing the operation.

Postoperative acute dilatation of the stomach may be overcome by stomach lavage with a Levine tube. Intestinal distention usually indicates arrest of the circulation in that part of the intestinal tract, an obstruction of the bowel lumen, or that the preoperative care of the patient has been neglected. Distention without vomiting may often be relieved by using a rectal tube. If this fails, enemas should be started, and when I say started, *I mean that they should be continued until relief is obtained.* The rectal tube should be left in place and the fluids siphoned off, rather than for the patient to expel them by intra-abdominal pressure. Pituitrin or eserine in small doses, administered while there is an enema in the patient, will often give relief. The best enema the writer has used is milk and molasses. If relief is not then obtained, examination should be made for some more complicated affair, such as obstruction which would require surgery. If in doubt as to whether there is an obstruction or not, it is better to do a jejunostomy at once through the left upper quadrant of the abdominal wall, under local anaesthesia, than to wait until the bowel is paralyzed and then to expect good results.

Postoperative renal insufficiency will not occur if the patient has been thoroughly examined before surgery. If a genito-urinary or a kidney operation is to be done, the phenolsulphothalein output should be known before operation. Postoperative urinary retention is best overcome by training the patient to use the urinal before the operation, if possible. If a male patient cannot void, using a retention catheter is better than frequent catheterization, to avoid development of a cystitis.

Postoperative cough, especially from ether administration to a cigarette smoker, is better treated by chlorine inhalations than by codeine, which should never be used. Thrombophlebitis might occur almost anywhere in the body and never be recognized, but if in the limb, and generally it is the left lower, the entire member should be elevated above the hip-level and the patient informed that his stay in the hospital is going to be prolonged. An ice-bag should be placed upon the groin and the limb gently bandaged and thoroughly protected from trauma. A pulmonary embolism, if affecting only a small area, will generally become absorbed under treatment such as is used in case of pneumonia. If a large area is involved, and an x-ray of the chest shows the mass to be infarcted, the prognosis depends upon the ability of the surgeon.

Postoperative treatment should not stop when the patient leaves the hospital, thorough instruction being given as to his care for the next few weeks. Proper support to the area of operation, such as elastic bandages or stockings for the limbs, proper corseting or binders for the abdominal wall, and proper clothing and exercise for the arm in breast operations, should be carried on for some time. He should also be thoroughly instructed as to his diet and the care of his bowels for the next month or six weeks. Personal hygiene and proper exercises should be clearly impressed on the patient's mind, so as to avoid the occurrence of complications which may be blamed on the surgeon. If written instructions are given to the patient, a copy of these should also be sent to the referring physician, together with the surgeon's final report as to the patient's postoperative progress and prognosis.

RHEUMATIC FEVER IN CHILDREN*

J. HARRY MURPHY, M. D.,
Omaha, Nebr.

More deaths are due in the United States to cardiac disease than any other condition; of these approximately 40% are thought to be of rheumatic origin. Quoting McLean(1), one-third of a series of 258 patients with early manifestations of rheumatic infections, showed first manifestations of the infection between the ages of 5 and 7 years. And since acute rheumatic fever in children presents such a varying clinical picture, we are therefore, doubly interested in it as a pediatric problem.

Acute rheumatic fever is one of the frequent acute infectious diseases of children, of unknown origin. It is manifested by small proliferative focal lesions in various parts of the body, by arthritis, by a predilection to cardiac involvement and is associated with chorea. The whole field of acute rheumatic fever cannot be reduced simply to an arthritis.

There is a characteristic indefiniteness in the childhood attacks that vary from mild to severe attacks of arthritis, transitory complaints described as growing pains of which 20% are probably rheumatic, chorea, erythemata which may be scarlatiniform, or multiform or nodosum, and occasional cases of sleep starts. The characteristic large swollen joints seen in adults are not such constant symptoms of rheumatic fever in children.

The primary manifestations commonly appear after 4 years of age, less commonly after 10 years and rarely under 4 years. "In the youngest patients the symptoms are usually confined to the heart."(2) The first attack strongly predisposes to succeeding attacks.

The gravity of the disease is seen principally in its tendency to carditis. And we cannot dissociate the two in any consideration of childhood rheumatic fever, or of heart disease in children. The frequency of cardiac involvement reaches the high in incidence of 95%(3), when all degrees of carditis are considered, varying from mild transitory myocardial changes to permanent organic disease. And probably 50-60% of acute cases show clinical evidence(4) of carditis. Cardiac pathology may occur during the first attack, will usually appear during succeeding attacks, and may be present in the very young as the only evidence of a preexisting rheumatic fever which may have gone unrecognized.

Arthritic symptoms are more common in boys and chorea is much more frequent in girls. Holt(5) says "Rheumatic infection in children is more often overlooked than confounded with other diseases."

A clinical grouping of cases of rheumatic fever that recommends itself from the standpoint of practicability is given by Stroud(6).

1. In cases in the first group the primary manifestation appears to induce sufficient immunity against recurrences. This primary manifestation is the only evidence of the disease save for the resultant cardiovascular damage.

2. Cases in the second group present no evidence of rheumatic activity between attacks, but these may become frequent until the child succumbs to an especially virulent one, or appears to develop a relative immunity between the ages of 12 to 16 years, and the relative cardiovascular damage becomes practically stationary.

3. In the third group, the resistance to the infection seems low and the child is overwhelmed by it, and dies within 1 or 2 years, or runs a course maintaining constant evidence of low grade activity with a toxic death in 3 to 5 years or gradual development of an apparent immunity at or just after puberty.

I have taken the liberty of quoting freely of this author's conclusions, because it aids in organizing such a many sided subject as now under discussion.

---

*Presented before the Douglas County Medical Society, Omaha, Nebraska, March 3, 1934.

INCIDENCE

The incidence of acute rheumatic fever is difficult to state from statistics. The cases requiring hospital care represent only a part of those actually existing. And furthermore, some are so indefinite that they escape recognition until such time as the cardiac findings are discovered. A case in point came under the writers attention this summer, when a myocarditis developed in the course of a post scarlet fever nephritis. The history, contributing to the diagnosis of rheumatic carditis, revealed that the patient had not been perfectly well for 3 months prior to the scarlet fever, and complained intermittently of "leg aches", easy fatigue, poor appetite and losing weight.

This disease, however, in its varied manifestations is undoubtedly quite frequent. According to recent figures, the incidence of acute rheumatic fever in New York City appears to be lessening. Inquiry in Omaha reveals the impression that this disease is less frequently encountered now than formerly. But more will be said about this in the discussion on its etiology.

Because of this indefiniteness, the present management of the disease should be more aggressive, and not as heretofore only supportive.

It would appear difficult to wage an aggressive campaign against an unknown enemy. And we cannot yet offer a proved definite cause for acute rheumatic fever. It is true that streptococcus, through one or more of its strains, has more completely fulfilled the roll of etiological agent, but not sufficiently well to be designated absolutely as the known cause. Until such a cause can be demonstrated with scientific certainty, we must attack through known channels.

The predisposing factors include age, race, familial tendency, seasonal influences, environment, focal infection, exposure to infection.

The age of primary manifestation is about 7 years, varying 3 years above and below this mean. Of course, proved cases have occurred at 1 or 1½ years but they are rare.

Racial characteristics, whether due to heredity, mode of living, economic stress, racial diet tendencies or constitutional peculiarities, appear in statistics and forewarn us of impending disease. From different sources, figures are available indicating greatest frequency in Italian, Hebrew, American; and Irish, in the order named.

FAMILY

Acute rheumatic fever frequently presents a familial history of infection in immediate members of the family, or in near relatives or grandparents. This suggests the management of this disease similarly to our present day conception of tuberculosis. Stroud(7) quotes an incidence of family history in 34% of 141 cases of acute rheumatic fever in children. It is the author's opinion, the frequency of familial disease will reach 50% at least. Such supporting evidence of family tendency to acute rheumatic fever should stimulate the physician to treat more radically a particular case whose symptoms may be mild or even trivial. This development in our knowledge of the disease offers a distinct advance in our present day management of a troublesome condition. And carrying the analogy further, the physician upon encountering a case of acute rheumatic fever, should examine others in the family, just as is done in the case of examination of tuberculosis contacts. Thus may he find by careful routine examination, evidence of unrecognized disease and institute such prophylactic measures as he may see fit. This constitutional tendency or diathesis represents a huge factor in the susceptability of the individual to the second requirement, i. e., the infecting organism.

CLIMATE

Climatic influence on the incidence of acute rheumatic fever is difficult to evaluate. Rheumatism is relatively rare in frigid and torrid zones, but very prevalent in the temperate zone where changes are frequent. Of interest here, is the report of increasing incidence of the disease in India and Malaya(8), ascribed to increase of European population. Clarke noted in passing that hemolytic streptococci are not commonly found in the pharyngeal flora of native population and of recent arrivals after residence there for a short time. In our own country, statistics show a seasonal variation, which varies in different communities. The peak of incidence occurs in the late winter or spring, and appears to occur at times of wet inclement weather. Carrying out this idea in study of the etiology(9), Llewellyn and Jones consider that rheumatism is fundamentally the outcome of an inborn tendency to instability of the heat or temperature regulating mechanism.

Acute rheumatic fever is more frequently encountered in urban communities. And furthermore, in cities the greater number of cases are found in those families living in crowded, unsanitary districts and in economically oppressed circumstances.

It is not the intention to convey the idea that it is a disease of filth or poverty, since it occurs in every strata of society. But the fact remains that the aforementioned environs encourage the incidence and spread the disease. Leddy(10), in a recent review, found the incidence of rheumatic heart disease in a group of Yale University students was 8.2 per 1000, in contrast to 15 per 1000 as an average from statistics of similar age groups in other walks of life. And among these students who had attended boarding schools, the incidence was 5.8 per 1000 as compared with 12.5 per 1000 among those from public high schools. Whether this is based on social or economic conditions, proximity of infected cases, low resistence due to crowded, ill ventilated quarters, or malnutrition, cannot be answered.

The status of focal infection in satisfying the roll of etiological agent has attracted close scrutiny. Tonsils, adenoids, sinus disease, alveolar abscess, and intestinal infection have offered hopes, but have not fulfilled completely the demands for a cure. The close association of upper tract infections, acute and chronic, and the common cold as the exciting cause of acute rheumatic fever, is borne out in clinical practice. The difficulty of our present position is principally one of relative values. Mackie(11) concludes that "tonsillar infection was twice as prevalent in rheumatic fever patients than in control cases of non-rheumatic patients." Kaiser(12)(13)(14), in his splendid study of the results of tonsillectomy in children, concludes that first attacks of acute rheumatic fever occurred 34% less often in the tonsillectomized child. The value of operation thus appears to be supported as a desirable procedure. The incidence of rheumatism in the army, offers another argument in its favor—of the enlistments in the army in 1913, 3% had had tonsils and adenoids removed, and in 1925 17%, while rheumatic fever in the army had an incidence of 6% in 1913 and 1.1% in 1925. On the other hand Kaiser(13) states that recurrent attacks of rheumatism are only 10% less often in children whose tonsils were removed after the first attacks, than in those who had not; that chorea occurred as often in operated cases as non-operated cases, but that carditis with chorea was less in children whose tonsils were removed. His final conclusion after 10 years of observation is to the effect that operation does not influence recurrent attacks.

The original portal of entry is more likely in Waldeyer's ring. And as Graffe(15) points out, the primary infection is in the region of Waldeyer's ring, dating from the beginning of the rheumatic infection, and was present before other changes in the body ascribable to the infection. Thus we are offered a more rational aspect of the problem of upper tract infection. Instead of tonsil alone, there has occurred an infection in any part or all of this ring of lymphoid tissue. This has antidated the chronically infected tonsil.

The infecting agent assumed to be present in a large number of cases of acute rheumatic fever, is a strain of the streptococcus group, though not always the same one, this very often gains entry through the upper respiratory tract. Hence the direct cause has not yet been designated. But the infectious nature of the disease as encountered in children is demonstrated by clinical and pathological evidence.

The communicability of the disease is evident by the familial tendency and spread in more populous communities. Whether the former tendency is a constitutional predisposition cannot ,be proved.

Therefore, the higher incidence of upper tract infection in rheumatic patients and in some patients, also of lower respiratory tract and gastrointestinal infection, indicates possible prophylactic measures in a certain number of cases.

Aggressive preventive treatment may dictate elimination of infected tonsils and adenoids, clearing of sinus disease and such foci in susceptible patients. It may also stimulate greater care in the treatment of the common cold, and urge precautions against the spread of the "common cold."

The portal of entry for the infecting agent thus being so varied and insidious, the cure of the disease by surgical treatment of foci of infection after the disease has become established, is problematical. Such is indicated and recommended, though we cannot promise certain relief against recurrence of attacks, except possibly in the first group of cases described in the early part of the paper.

Whether reactivation of the existing infection, explains the subsequent manifestations of activity as an allergic phenomenon, is not universally accepted. But such a possibility should stimulate thoroughness in eliminating probable foci of infection. Such a possibility also recommends the process of disensitization by streptococcic vaccine. And this, especially for cases of group 3 is recommended by Stroud(16). Active treatment of the disease in its acute attacks, is very helpful to the patient but does not necessarily shorten the course of the disease.

In conclusion:

1. Acute rheumatic fever often presents an in-

definite picture in the child as compared with the adult.

2. It cannot be dissociated from the problem of heart disease in children.

3. Its incidence is greater than symptoms suggest, and is more often overlooked than confused with other diseases.

4. The susceptible age is 4 to 10 years.

5. It is a family disease.

6. It is communicable.

7. Our present day management should be an aggressive campaign against the predisposing factors in this disease, the pathology of which, when once established, oftentimes resists successful treatment.

BIBLIOGRAPHY

1. McLean, Annals of Internal Medicine, 1932.
2. Holt, P. 1124.
3. Swift, Journal A. M. A., 1929, P. 2011.
4. Holt, P. 1124.
5. Holt, P. 1129.
6. Stroud, Journal A. M. A., 1933, P. 101 - P. 502.
7. Stroud, P. 101 - P. 503.
8. Clarke, British Med. Journal, Jan. 14, 1933.
9. Llewellyn & Jones, M. J. & Rec., May 17, 1933.
10. Leddy, Journal A. M. A., Nov., 1932.
11. Mackie, Journal A. M. A., P. 172 - P. 199.
12. Kaiser, Journal A. M. A., P. 89 - P. 2239.
13. Kaiser, J. D. Children, P. 37 - P. 559.
14. Kaiser, Journal A. M. A., P. 95 - P. 837.
15. Graffe, Deutche Med. Woch, July 29, 1932.
16. Stroud, Journal A. M. A., P. 101 - P. 505.

ACUTE MASTOIDITIS BILATERAL, LATERAL SINUS THROMBOSIS. CEREBELLAR ABSCESS, OPERATION AND RECOVERY

HERMAN E. KULLY, M. D.,
Omaha, Nebraska.

This case is presented first, because recovery from otogenic abscess of the cerebellum is rare; secondly, because it represents the manifold complications which can arise from the neglect of the "simple" acute upper respiratory infection.

Mildred B., five years old, was admitted to the Douglas County Hospital on November 11, 1932, with the following history: For the past two weeks she had been under treatment at the City Emergency Hospital for scarlet fever. At that time both ears were discharging profusely, and there was present a purulent nasal discharge. The ear drums had ruptured spontaneously one week before the child had been brought to the City Emergency Hospital. The course was not unusual until November 9, 1932, when the temperature rose suddenly to 106.4° F., following a severe chill. On the following day the patient again experienced a chill with a similar rise in temperature.

She was first seen by me on November 11, 1932. Examination disclosed an acutely ill, lethargic child. The temperature was 104.4° F., and the pulse rate was 140. A large amount of pus was present in both external auditory canals. A diagnosis of acute mastoiditis bilateral was made, and the possibility of a lateral sinus thrombosis was considered.

Upon operation, the right mastoid was found to be of the pneumatic type with extensive necrosis of all cells. The lateral sinus and the dura of the middle fossa were exposed and appeared normal. The mastoid cavity was packed and drained with iodoform gauze. The left mastoid was completely necrotic. The wall of the lateral sinus was thickened, grayish in color, and upon aspiration yielded thick green pus. At this stage, the left internal jugular vein and the common facial vein were ligated and divided between ligatures. The lateral sinus was then opened and found to contain a disintegrating thrombus and free pus. A small amount of free bleeding was encountered at the torcular end of the sinus. The dura of the cerebellum, which was exposed during the course of the exenteration of the mastoid cells, appeared thickened and discolored. An aspiration needle was introduced through a dural opening and at a distance of 3 centimeters, pus was encountered. A tube was introduced into the cerebellum for drainage and the entire cavity was packed with iodoform gauze. The patient was semi-comatose for the next forty-eight hours, being nourished by venoclysis. Temperature elevations to 105° F. were noted on the first and second postoperative days. Consciousness was regained on the third day, and recovery was slow but progressive with discharge from the hospital on January 5, 1933.

CURE OF TYPHOID CARRIERS

During the past few years, George H. Bigelow and Gaylord W. Anderson, Boston (*Journal A. M. A.*, July 29, 1933), followed carefully a series of twelve permanent typhoid carriers who have submitted to removal of the gallbladder. Nine of these were operated on in order to be cured of their carrier condition. The other three came to operation primarily because of the clinical condition of the gallbladder. With a single exception, the dates of infection ranged from four to thirty years prior to operation. Medical measures for the cure of typhoid carriers have not been effective. In these twelve cases, cure of the carrier condition has apparently been effected through removal of the gallbladder. In all of these instances, stones were found and the symptoms associated with the gallbladder were cured. Prior to operation the bile should be shown to contain typhoid bacilli, as it is important to make certain that the infection is located in the biliary tract. All carriers whose gallbladders are so removed should be followed after operation for at least a year by monthly examinations of specimens and not definitely released until a negative bile culture has been obtained. The payment of cost of operation is a justifiable public health expenditure, which is cheaper and more effective than subsidy.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor..........................Madison, Nebr.
R. B. Adams, M. D., Business Manager.
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman..........................Madison
A. F. Tyler..........................Omaha
B. F. Bailey..........................Lincoln
R. B. Adams, Ex Officio..........................Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. 19 November No. 11

MEDICAL ECONOMICS AT THE ANNUAL CONFERENCE

The American Medical Association Conference to which your secretary and your editor are invited every fall was held in Chicago late in September.

While other important matters came up for discussion the meeting resolved itself largely into a discussion of medical economics.

We learned that the relief directors having charge of medical relief do not consider medical relief as basic, like fuel, groceries, clothing; but incidental. The difficulty in arriving at a fee schedule that will be compensatory hinges on this point.

We learn that fee schedules for medical relief to indigents vary greatly in a number of near-by states. In Colorado, for instance, medical service to indigents is compensated on a basis of 70% of the normal fees; in Wyoming, 75% of the normal fees is paid. In Louisiana fees are paid on a basis of 33% reduction from the normal. In Texas the fee schedule is based on 50% of the normal fees. The Iowa State Medical Society declined to accept any Federal Relief funds for medical care to indigents, preferring to take care of the indigent as the profession has always done.

It was learned that contrary to what was rather generally believed, if a CWA worker does not earn enough to pay for medical service to his family, the family is entitled to medical relief from FERA.

It was vigorously contended that the most important thing in medical economics is the problem of Health Insurance.

Condemnation was heaped upon the Social Workers of the United States because they are endeavoring to exploit the Medical Profession.

The threat of some form of State Medicine is before us. It was urged that the American Medical Association must go before Congress with a concrete plan to meet the onslaught—must not only oppose that which is presented by others. It was suggested that the Public Health Service could help solve the problem.

Secretary Olin West assured the members of the conference that headquarters officials were well awake to the situation, that they had personal contacts in Washington, that at least some of the A. M. A. officials were well acquainted with Washington Officialdom from the White House down along the line and that every effort is being made by A. M. A. officials to protect the interests of the medical profession. His remarks were a well merited rebuke to back-biters who have been assailing the officials at headquarters.

The American Medical Association headquarters has not only medical and organization talent; but outstanding legal and political talent as well and in that we repose confidence.

TOWARD A PERMANENT MEDICAL AID PROGRAM

A year's experience with medical care of the unemployed under the temporary provisions of the Federal Emergency Relief Administration indicates that such a medical program must be built up into a continuing one, says the American Public Welfare Association, in a report just issued.

However the plan is permanently set up, the report points out, there must be allowance for variations in procedure, since resources and demands in the various sections of the country differ widely. To make wise planning possible, adequate information is essential and communities now operating medical aid programs will have to keep more definite statistics than they have so far, showing how many people are aided and what types of aid are given.

Twenty-nine of the 48 states surveyed by the Association in co-operation with Rosenwald Fund, report a successful organization of their medical aid systems under FERA. Nine of these states have adopted a state-wide plan and scale fees for their doctors and nurses, with county or city administration on a state-recommended pattern.

Half of the states with medical aid programs have limited their service to home and office calls for acute illnesses, making no general provisions for surgical or chronic care. The others have provided for care of chronic illness and even give a limited amount of corrective service.

Lack of money and fear of increase in costs have been heavy drawbacks to the success of some of the medical aid programs, the survey shows. Poor facilities and untrained personnel, and difficulties in adjustment of relations with the medical professions and local public health services are among others.

The first year's experience, however, has done much to teach communities that they are responsible for medical aid to their poor, and cannot expect it from physicians for nothing. They have learned that to be successful, the medical aid program must have effective local supervision and control of costs, hospitalization must be provided for in the future and greater provision must be made for care of chronic illnesses and for special services.

—American Public Welfare Association.

HUMAN CONVALESCENT SERUM IN THE TREATMENT OF PREPARALYTIC POLIOMYELITIS

Alfred E. Fischer, *American J. Dis. Children,* September, 1934, gives a comparison of 447 treated and 102 control patients in New York City and summarizes as follows:

"We have analyzed data collected on two groups of patients gathered for the purpose of determining the value of convalescent serum in the treatment of preparalytic poliomyelitis. We do not consider that the question can be answered definitely because in spite of every effort to obtain comparable data, it was not possible to do so. It has been pointed out that it is particularly difficult in the case of medical material to obtain strictly similar groups. The most important point which our study has emphasized is that 579 patients with poliomyelitis were seen early in the course of the disease, of whom 477 were treated by injection of convalescent serum and 102 were untreated. We showed that the sex, age, stage of the epidemic, day of treatment, dosage and method of administration of serum had no influence on the outcome of the disease so far as can be determined statistically, while, on the other hand, the temperature, cell count and general clinical impression could at times be used as an indication of the degree of severity of the illness.

"This was the first epidemic in which an attempt was made fairly to evaluate the serum not only by treating patients in the preparalytic stage but by examining and following a number of control patients. We have demonstrated that the outcome for the treated patients was no better, if as good, as for the untreated ones; while the controls were probably somewhat milder, we feel that no advantage was shown by the other group. For this reason it should be possible in the future to obtain a sufficient number of control cases, for our present study has demonstrated that there is no proof that a physician is depriving his patient of an equal chance for complete recovery by not administering convalescent serum. Lacking a substitute therapeutic procedure, it would seem fair in subsequent epidemics to retest the value of potent serum in the preparalytic or meningitic stage of poliomyelitis, using, if possible, exactly parallel or alternate cases for control. If this is impossible, at least comparisons should be made as to the outcome for treated and untreated patients, using as a basis the day of the disease, the symptoms and other factors such as those discussed in this report."

DR. EDWARD LIVINGSTON TRUDEAU

Founder of the Sanatorium Movement in the United States and Originator of the Modern Treatment of Tuberculosis

"His life was gentle, and the elements
So mix'd in him that Nature might stand up.
And say to all the world, this was a man!"
—Shakespeare.

A doctor, doomed by tuberculosis, hunting foxes in the Adirondack Mountains in 1875 noticed that the less he walked, the better he felt. Today one of the greatest sanatoria in the world forms a monument to that observation. Edward Livingston Trudeau was the physician, and Trudeau Sanatorium, world-famous center for treatment and research, is the monument.

In commemoration of the 50th anniversary of the opening of the one room cottage that became the nucleus not only of that single institution. but of the entire sanatorium movement in this country, the familiar Christmas Seal that finances the efforts of the affiliated tuberculosis association to overcome the disease bears this year a picture of "Little Red," as the cottage is called.

Trudeau was born in New York City, October 5, 1848. He was the descendant of many generations of French physicians, and was thus well qualified by heredity for the discovery he was destined to make. His youth was spent with his grandparents in Paris, where he obtained his education in French schools. Returning to New York at eighteen, he was able to spend several years of leisure during which he engaged in popular social activities and athletic sports. Then, deciding to settle upon some career, he secured an appointment to the Naval Academy, which was then at Newport.

He gave this up to become the devoted nurse of his brother, who had contracted tuberculosis. During the illness Trudeau often slept with his brother, and by order of the attending physician every window in the room was kept tightly closed. Of course, he also contracted the disease. It was not until he had married and established himself in medical practice several years later, however, that the fact was realized, although in the light of present knowledge he had several warnings. The first resulted from a walking match from Fifty-ninth Street to the Battery. Although he was an excellent athlete and sportsman, he was thoroughly exhausted from the match for several days, and developed a "cold" abscess which had to be operated on several times. While in England during his honeymoon, the second warning came in the form of a swelling of the lymphatic glands, but so little was the mechanism of tuberculosis infection known then that no alarm was felt.

Actual discovery came when a fellow physician declared he looked ill and insisted on taking his temperature. It was 101 degrees! Still unconcerned, and merely to forestall an argument, Trudeau went to a specialist for examination. He was told that the upper two-thirds of his left lung was involved!

In those days a diagnosis of tuberculosis was considered a death sentence. Trudeau felt that he was merely marking time, but he did try in the South and in Minnesota to improve his health. His traveling was in vain, so he decided to spend his last days in his favorite hunting ground in the Adirondack Mountains of Northern New York State. This region was then a wilderness braved only by ardent sportsmen, but he was determined to remain there throughout the winter of 1874. So deep-rooted at that time was the belief that a consumptive should seek a warm and sunny climate, and avoid cold and storm, that only after considerable argument and persuasion could he induce Paul Smith and his wife to allow him and his family to spend the winter at their hunting lodge. On his fox-hunting trips during that winter Trudeau made his observation regarding the value of rest in treating tuberculosis.

"I found," he said, "that I could not walk enough to stand much chance for a shot without feeling sick and feverish the next day, and this was the first intimation I had as to the value of the rest cure. I walked very little after this, and my faith in the value of the rest cure became more and more fully established."

The idea of building the sanatorium originated in his reading, in 1882, an account of Brehmer's Sanitarium in Silesia. No information was available regarding the planning and building of sanatoria, but Dr. Trudeau "felt that aggregation should be avoided, and segregation, such as could be secured by the cottage plan, would be preferable. By this plan an abundant supply of fresh air could be secured, and the irritation of constant close contact with many strangers could be avoided."

Friends in New York contributed sufficient funds to permit him to erect a few small cottages. The first one, called the "Little Red" because it was painted that color, was completed in February, 1884. Mrs. William F. Jenks was the donor. It consisted of a single room, 14x8, a brick chimney with a wood burning stove, two beds, chairs, wash stands, and a clothes cabinet. There was a little porch so small that only one patient could sit out at a time. This little cottage, now kept as a relic and museum, was the first sanatorium in the United States in which the modern treatment of tuberculosis was given. Two factory girls from New York City were the first patients. Their names and subsequent history after their discharge as cured is now unknown.

In the same year in which Trudeau read of Brehmer's sanitarium, Dr. Robert Koch's epochal paper on "The Etiology of Tuberculosis" appeared. Trudeau determined to prove Koch's experiments for himself, and plunged into experimental work with guinea pigs. In order to carry out his laboratory work he was forced to make his own apparatus, keep his guinea pigs warm in a hole in the ground, and arise several times each night during cold snaps to stir up the fire and provide the correct temperature for his cultures. He succeeded despite the handicaps, and his laboratory (at first a makeshift that was burned down and later rebuilt) was the first in this country to be devoted to the study of tuberculosis.

As his work became known he received the cooperation of the leaders of the medical profession. His sanatorium soon became an assured uccess and his long single-handed fight in the ense woods of the Adirondacks against the tuercle bacillus was winning him high honors. One of the greatest of these was his unanimous ection in 1904 as the first president of the new- organized National Tuberculosis Association.

During his life Dr. Trudeau was forced many mes to take to his bed because his tuberculous sion had become active, and several times his fe was despaired of. Yet he lived until Novemer 15, 1915, to the age of sixty-seven years.

Before his death he had the satisfaction of seeng the benefits of his laborious research and exeriments carried into every corner of the United States by bits of colored paper—the penny Christmas Seals.

Since the time when Trudeau was the first resident of the National Tuberculosis Association the organization has become the parent of ,000 affiliated associations in all parts of the United States. Through its organized campaign upported by funds raised in the annual Christmas seal sales, it has been greatly responsible or reducing the death rate from tuberculosis.

In a speech Trudeau delivered shortly before his death he said, "Over the doors of the hospitals for consumptives twenty-five years ago might well have been written these words: 'All hope abandon ye that enter here.' While today, n the light of new knowledge we may justly place at the entrance of the modern sanatorium the more hopeful inscription: 'Cure sometimes, relief often, comfort always'."

—A. Schaeffer, Jr.,
National Tuberculosis Assn.

RIGHTS OF PHYSICIAN AND DUTY OF COUNTY BOARDS

We have heretofore stated that the rights of physicians for medical service to indigent and pauper has been repeatedly determined by the courts of last resort and are well defined; but it seems necessary every few years for the courts to again affirm the physician's rights and the county board's duty, to impress those county boards who will not learn.

A recent decision in this state is the opinion in the case of Miller vs. Banner County—the case of Dr. A. L. Miller of Kimball.

This opinion is written by Judge Eberly and while it was on a little different state of facts, in that the county had no county physician, yet it really reverses the case of Sayre v. Madison County without saying so.

Because of the general medical interest in this matter we publish the syllabus and opinion almost entire.

No. 28918
A. L. Miller, Appellee,
— vs. —
Banner County, Nebraska, Appellant.

In an emergency requiring an operation to save the life of a pauper, the surgeon should, if reasonably possible, attempt to communicate with the proper corporate authorities charged with the care of the poor, but if an arbitrary refusal is given, or if such corporate authorities be noncommittal, the necessary services may be rendered notwithstanding, and the law imposes an obligation upon the county to pay the reasonable value of such services.

Evidence examined, and held to establish that Clarence Hooley was a pauper within the meaning of the poor laws of this state; that his settlement as such was in the county of Banner as a member of his mother's family who there resided; and that the same amply sustains the judgment of the district court.

Heard before Goss, C. J., Good, Eberly, Day and Paine, JJ., and Yeager, District Judge.

EBERLY, J.

This proceeding against Banner County is a prosecution of a claim for services as physician and surgeon performed by plaintiff and appellee for one Clarence Hooley, alleged to be a pauper. This claim was originally filed with the board of county commissioners of Banner County. It was rejected by them and the claimant appealed to the district court of Banner County. Here a jury was waived, and, in a trial to the court, evidence was introduced, on consideration of which findings and judgment for plaintiff were entered. From this determination, and the order of the trial court overruling its motion for a new trial Banner County appeals.

See also, Callahan vs. Callahan. 7 Nebr. 38; Faulkner vs. Simms, 68 Nebr. 299; Commercial Nat. Bank vs. Ruff, 110 Nebr. 302; Bodge vs. Skinner Packing Co., 118 Nebr. 179.

At the time of the trial Clarence Hooley was 19 years of age. His father was dead. Sometime after his father's death, his mother married a man by the name of Murphy, who, in 1929, deserted her and his whereabouts thereafter are unknown. In 1930, after the desertion of the mother by Murphy, the mother and her family, of which Clarence was a member, were residing in Gering, Nebraska. In October of that year the entire family embarked in a Ford automobile and started for Oregon, intending to there establish their new home. They proceeded as far as Cheyenne, Wyoming, and then turned back by reason of a storm. Mrs. Hooley and her family then stopped in Kimball, Nebraska, and afterwards they started north and had reached Banner County when a storm again overtook them. The family, including Clarence, sought refuge in an abandoned sod house. Later the owner thereof, in a spirit of charity, gave them permission to live in this sod house without paying rent.

The family continued to occupy this place as their home until in April, 1932. After the family settled down in Banner County in 1930 they worked at husking corn for various neighbors, and at other farm employment, and thus managed to support themselves until about Christmas time. After Christmas the family were in regular course given county aid through Commissioner Blake of Banner County. The family appeared to be able to support themselves during the summer, when there was work, but during the winter months it was necessary for them to receive aid, which Banner County supplied.

During this time Clarence Hooley worked at various places. He brought his wages home to the family, deducting only enough for necessary expenses, and he stayed at home when he was out of work. Commissioner Blake interested himself in the family, and personally took Clarence out in 1932 to secure employment. Later the boy got a job with one George Evertson for a salary of $5.00 per month and his board and room.

It appears reflected in the evidence that the Hooley or Murphy family had neither credit nor means during the time they lived in Banner County, and each winter the county furnished the family with aid. When a sister of Clarence Hooley became ill in the winter of 1932 the county of Banner furnished medical aid for her. During the period that followed the occupancy of the abandoned sod house by the family Clarence worked intermittently wherever employment was available; sometimes for wages, and sometimes for board and lodging. He returned home during seasons of non-employment.

It also appears that Clarence Hooley had several attacks of appendicitis, the first of which occurred when he was working for Commissioner Blake of Banner County. On this occasion Mr. Blake brought him back to the family home where he remained until he had recovered. The second attack occurred in the spring of 1932, and he was taken by Mr. Evertson, his employer, to the office of Dr. A. L. Miller, claimant, in Kimball, Nebraska, on April 1st, 1932. The doctor examined him and diagnosed his ailment as appendicitis, and then called up County Commissioner Blake regarding the matter. The evidence of the doctor is that Commissioner Blake replied that "he knew the boy"; that "the county had been taking care of the family"; and that "he was only one of the commissioners, but if the boy needed attention he would have to be taken care of."

The case turned to the worse, and in the early morning of the following day Clarence was again brought to Dr. Miller, and placed in the hospital at Kimball. At that time the boy had developed a ruptured appendix and an immediate operation was an absolute necessity. The following conversation then occurred between Dr. Miller and Commissioner Blake:

"Q. And where did that conversation take place? A. In my office. I called him on the telephone, both him and Mr. Johnson (another county commissioner of Banner County). Q. And what was your conversation with Mr. Blake at that time? A. I told him the boy was brought back to the hospital, * * * and he had a ruptured appendix, he was very ill and he would have to be operated on. Mr. Blake said, that he has to be taken care of, you go ahead and take care of him the best you can. I told him he was the county commissioner up there and I felt the boy lived in Banner County, it was their charge and that the hospital and doctor wasn't able to carry the entire load. I was expecting to operate on him and send them the bill."

The doctor also called county commissioner Johnson, and the following conversation took place:

"Q. And what course of action—you mentioned about calling Mr. Johnson, the county commissioner? A. Yes sir. Q. What was your conversation with him? A. I told him about the boy being in on the day before and he was brought back this morning, that he conversed with Mr. Blake and I wanted t county to okay the bill. He said, well, he is over Blake's neighborhood and he thought maybe the b could pay his own bill. Before we operate on hi I would have to wait until the commissioners m and I told him that somebody would be paying for funeral bill at that time, if you are going to wait f the commissioners to meet, the boy would be dea and I would operate on him and give him the nece sary medical attention."

While the boy was in the hospital the Hooley far ily moved to Kimball county with Commission Blake's assistance. Further, it may be said that this time, in addition to necessary clothing, the po sessions of Clarence Hooley amounted to the sum $3.10.

Thereupon Dr. Miller removed the ruptured appe dix and thereafter cared for Clarence with such su cess that he fully recovered. Then the doctor su mitted his itemized bill for these services perform as a claim against Banner County. This bill recite

"Kimball, Nebraska. April 19, 1932. The County Banner, to Kimball Hospital and A. L. Miller, M. I Dr. To care of Clarence Hooley and Board of Healt April 2, 1932 to April 18th—16 days hospital at $4.50 $72; Operating room—$10; Anesthetic and dressin —$15; Dr. Miller's fee for operation—$75 (This is on half the usual fee.)"

This claim the board rejected, and the district cou allowed.

In the present instance we have a case of a emergency, where an immediate operation was ne essary for the saving of human life. No county phy sician appears in the picture, and the county boar has wholly failed to provide the essentials of th necessary care that common humanity requires. Ob viously under these circumstances, the rule our statu tory provisions imply and the history of poor reli in all jurisdictions sustains governs, viz., That i cases of emergency, a physician should, if reasonabl possible, attempt to communicate with the prope corporate authorities charged with the care of th poor, but if an arbitrary refusal is given, or if suc corporate authorities be non-comittal, the necessar services may be rendered notwithstanding, and th law imposes an obligation upon the county to pay th reasonable value of such services. Newcomer v Jefferson Tp., Tipton County, 103 N. E. (Ind.) 843 County of Christian v. Rockwell, 25 Ill. App. 20; Dyke v. Board of Com'rs, 121 Pac. (Kans.) 1112; Robbin v. Town of Homer, 103 N. W. (Minn.) 1023; Boar of Sup'rs of Lee County v. Gilbert, 12 So. (Miss. 593; Trustees of Cincinnati Township, Hamilto County v. Ogden, 5 Oh. 23; Eckman v. Township o Brady, 45 N. W. (Mich.) 502; 48 C. J. 537, sec. 24 and 539, sec. 246.

In the present case it is no objection that the serv ices were rendered in the adjoining county of Kim ball. Randolph v. Town of Greenwood, 122 Ill. Ap 23; Rock Island County v. Arp, 118 Ill. App. 521.

The only real questions presented by this recor are: (1) Was Clarence a pauper? (2) Did he have settlement as such in Banner County?

The rule of the common law of England is lai down by Blackstone as follows: "In legitimate chil dren, though the place of birth be prima facie th settlement, yet it is not conclusively so; for ther are, settlements by parentage, being the settlemen of both of one's father or mother." 1 Cooley's Black stone, (3rd ed.) 361.

So, the rule appears generally accepted that an un emancipated child whose father is dead takes the set tlement of its mother by derivation. 48 C. J. 485, sec 121; Bozrah v. Stonington, 4 Conn. 373; Torrington v Norwich, 21 Conn. 543; Jackson v. City of Boston, 15

E. (Mass.) 37; Stillwell v. Kennedy, 5 N. Y. S. 407; rrell Township v. Pittsburg Guardians of the or, 62 Pa. 472; Bethel v. Tunbridge, 13 Vt. 445.

The authorities also sustain the principle that the sence of Clarence Hooley from home, as required his work, was wholly ineffectual to affect his ttlement," as that term is employed in the poor vs, and it continued as a member of his mother's nily in Banner County.

t can hardly be contended that Clarence Hooley, view of his entire history, when suffering from this ack of appendicitis, was not a "pauper" within the aning of the poor laws of our state. This term y be defined as follows: A pauper is a person who ll be unable to earn a livelihood in consequence any bodily infirmity, who is without means, and o is without kindred of sufficient ability to sup-t him.

n other words, we are satisfied, in view of the dings of the trial court, that the present case was of emergency, and that Clarence Hooley was a uper having his settlement in Banner County.

The judgment of the trial court allowing the claim suit is therefore correct, and the same is,

AFFIRMED.

CHOLERA ON OVERLAND TRAIL

Selections from

"A Prairie Doctor of the Eighties"*

The gold rush to California began in 1849. olera, says Osler in his *Practice of Medicine*, tered the country through New Orleans in 48 and in 1849 spread widely along the Mis-sippi Valley and across the continent to Cali-nia. It was reported very fatal among the wnees in 1849, and it was estimated that by 7th of June of that year 200 California bound igrants had died east of Fort Kearney.

It was estimated that in the spring of 1850 ty thousand emigrants started from St. Jo-ph, Missouri, and points north to Council uffs, for California, Salt Lake City and Ore-n via the Platte River routes. The number horses, mules and cattle accompanying the igrants was estimated above 100,000.

Cholera was very prevalent in June, and broke t in every train in the Plum Creek Valley. A rrespondent counted forty graves in sixty miles. d thinks 250 must have died the first half of month. By August 9th, 700 lay buried be-een Fort Laramie and the Missouri River. Plum Creek (now Lexington) June 27, 1850, C. Mason, scion of a prominent St. Louis fam-, died of cholera. A Doctor Knox is mentioned having attended him and "sat up with him all ght."

Of several detachments of troops passing ng the same route during the height of the idemic, "not a man was lost owing to strict ention of diet, water and camp regulations."

Emigrants drank water from stagnant pools and holes dug in the ground in preference to running water from the Platte, thinking it might be purer, and "the graves encircling the pools show the consequence."

A correspondent, "R. H. D.," who seems to have been a physician, writing under date of June 25, 1850, of the cholera epidemic east of Fort Laramie, says:

"When I wrote you last I stated the health of emigrants to be remarkably good. Some few cases of cholera had been reported, but I myself had seen none. Since then how changed the scene: The angel of death has spread his wings over our way, and breathed his pestiferous breath upon the unfortunate emigrant.

"Many a poor unfortunate youth, far from home and friends, has breathed his last on the desert air, and found a lonely grave by the wayside; around his dying couch, no kind friends gathered to soothe and comfort the last sad moments of life; but, in an open wagon or tent, exposed to the stormy elements without, and the miserable comforts within, he bowed himself with stubborn submission, to the will of his creator. I have seen the father stand by the bed of his dying son, the brother by his brother, the friend by his friend; with them were nothing save but the stern sympathy of man's nature; and I can look on with partial indifference. They had but met the fate which every one of us might hourly expect. But on one occasion it became my duty to pronounce the hopeless condition of a dying husband and father. . . . . . .

"I had been called to see a man who had with him his wife and seven children. His case I considered then almost desperate, but by close attention might have been saved. Several days after I chanced to see him again. As I sat by his side with my finger on his sinking pulse and heard in his throat the death rattle, the most ominous sign to the physician of approaching dissolution, his wife, with a smothered groan, asked me to tell her precisely his condition, saying she wished to know the worst. I told her she should not flatter herself any longer with hope, but be prepared for the worst. I arose to leave the tent, and as I did so returned the fee I had received on a former occasion, and I let drop a tear in sympathy for her desolate and bereaved condition. God grant I may not on this trip, be again called upon to perform such a duty.

"Most physicians along the road believe the disease which has prevailed among emigrants with such fatality, to be epidemic cholera. Of this I am somewhat incredulous. Certainly, local causes sufficient exist on the Platte to produce, if not the most violent forms of darrhoea (diarrhoea) to incite, at least, the most latent predisposition to cholera into unrestrained action. The entire Platte bottom is covered with saline matter, such as salt-petre, salaratus, etc. (I have used no analysis but that of taste). Add to this the first emigrants' sunk well in the bottom. Into these have accumulated the filth and scum which 30,000 persons had left along the road. The use of this filthy water, together with exposure and unwholesome diet, are sufficient, in my opinion, to account for all the sickness which has occurred.

"On the north side of the Platte (Council Bluffs road) where emigration was less and water better, not a single case occurred."

"He who laughs last seldom gets the point anyway."

---

*A manuscript by F. A. Long, Editor, Nebraska State Medical rnal, awaiting publication.

EDITORIAL PARAGRAPHS

Dr. Benjamin Rush was the only physician to sign the Declaration of Independence.

New ad in the *Journal*, The Corn Products Refining Co., (begun in the October issue).

In the Texas State Medical Society the board of trustees has absolute control of the finances.

The *Volta Review* magazine in the interests of the deaf, estimates that there are from 90,000 to 95,000 deaf in the United States.

Dr. Max Thorek, Chicago, reports 84 amputations of the gallbladder by electrocoagulation, without a death. The cases were not selected, but of the usual run.

Dr. K. S. J. Hohlen, Lincoln, has been named State Medical Relief Administrator for Nebraska under the Nebraska Emergency Relief Administration (NERA).

All Nebraska physicians do not like the present compensation arrangements under the FERA and all do not like the set-up. Let us remember that it is not a theory, but a condition that confronts us.

Before the American College of Proctology, a Texas physician stated that the Mexicans for generations had used "bitter bush" Chaparra Amargoso as a remedy for amoebic dysentery, common in Mexico.

Authors whose manuscripts are in possession of the editor of this *Journal* for publication will please have patience for a few months during which time the editor hopes to get caught up with the material in hand.

We like to think of the doctor as first of all a scientific medical personage and secondly as a human being interested in some of the lighter things of medicine, current comment and the like: hence these editorial paragraphs.

From a press report we glean that a Seattle physician in a suit for a fee for an appendectomy, the patient dying three weeks later, testified that damage to doctor's reputation when a patient dies should entitle him to a larger fee.

A story comes from Germany that the hereditary health courts have examined something over a thousand deaf persons and have ordered sterilization of all but 98. "Sterilization gone mad" says a commentator in the *New York State Journal of Medicine.*

It seems to be a well established fact that most infants under six months of age are immune t measles, diphtheria, scarlet fever and some othe infectious diseases. Plausable explanations a given to account for this immunity: but the cas is not proven.

The eight and twelve hour day for hospit nurses has reached Nebraska. Six dollars a da is to be charged for nurses working 12 hour and four dollars for nurses working 8 hour This schedule went into effect in Omaha ho pitals October 15.

There is much righteous indignation over t fact that in the plan for medical service to ind gents, no provision was made for cases necessar to be hospitalized. Hospital authorities complai that auto accident cases are dumped on them a most daily and nightly.

In Minnesota funds paid to physicians f medical care to indigents are not to be call "fees" but "medical allowances." This becau they are not adequate payment for the work don they are simply allowances to assist physicians pay the expenses involved.

Appointment of a board of medical examine at North Platte for the convenience of wa earners that may be injured at the Sutherla Power Project, was made by Governor Brya The men named are Dr. Otis R. Platt, Dr. J. Newman and Dr. C. A. Selby, all of North Platt

At the recent conference in Chicago mu stress was placed on a feature of local medic societies called "barnstorming,"—programs p on by local men. This editor has always conten ed that local men must take a more promine part in programs of local societies. The lo man must be brought out.

Speaking about diets, a Frenchman weigh 326 pounds, recently, so it is stated, consum the following menu served him—and survive Fish, 2½ pounds; chicken, 2½ pounds; mutt 2½ pounds; white beans, a whole cheese, 29 sorted pieces of cheese, six apple tarts, two b tles of Alsatian wine, two bottles of Burgun and four bottles of Normandy cider.

As we approach the holiday season two ma welfare organizations appeal to our charita inclinations—the Red Cross and the Christn Seals. Medical men and women, above all p sons, see the need of the work done by these ganizations and the results obtained. The me bers of the medical profession will do their d toward these organizations and their work.

Election time is less than a week in the fuure. Great issues are at stake. Every person ligible to vote owes it to himself to cast his balot according to his best judgment. Our instiutions are based on the theory of representative overnment. The government cannot be repreentative unless those eligible to vote do their art.

The American Medical Directory, 1934. credts the State of Nebraska with 1772 physicians nd a population of 1,392,000 or one physician or every 785 persons. How medical populations lo grow. There is one physician for every 814 eople in the entire United States.

Dr. H. H. McClellan, for four years superinendent of the Dayton (Ohio) State Hospital peaking on mass therapy for the insane conludes that:

The insane have physical illnesses just as do he sane.

The colon of the insane has considerable stasis.

The insane are, as a rule. underweight.

Increased hydrotherapy will reduce the need or restraint.

Modern methods of manufacture of commerial ice cream have made this food an important nd valuable source of milk in the diet of children nd adults. State and local control over the inredients used and over the health of the workers nake ice cream a safe and nutritious food. The nilk and cream used are rich sources of calcium, itamins, and protein. The fruits often added for lavoring are also essential to good health and he sugar provides energy. Eggs are also freuently used in the manufacture of ice cream nd their nutritive value is well recognized.—Reid in *J. Mo. Med. Assn.*, 31:317. Aug. 1934).

Illinois has acted on the principle that every hild is entitled to an education. In the pursunce of this policy every handicapped child is laced into the public school and a special allotnent of $300 above the regular pupil allotment s set aside for his special care and instruction. n Peoria for instance several rooms are set aside or crippled children. Seats especially adapted o their defects are provided for them. If a child s unable to sit a cot is provided for him. Physial therapy is provided with the regular school ourse. Their sores and wounds, if any, are ressed. They are given milk in the mid-foreoon and mid-afternoon. Noonday luncheon is erved at the school and every child is given a ot for rest and a nap after lunch. Nurses are mployed to care for the pupils and to supervise heir play.

Worse than medical jargon is medical slang. The best type of medical writing is that which appears in the case report. The use of the word "gut" for intestine or the plural of the word for the other contents of the abdominal cavity may be considered a medical affectation quite as bad as "the acute abdomen." When the surgeon says he did a "chronic appendix," when the gynecologist speaks of "an abdominal woman," when the dermatologist "puts the patient on iodides" or when the internist says the patient "runs a swinging temperature," they are speaking medical slang. The gynecologist would hesitate to speak of doing a Caesar when he performs a cesarean operation. These are some of the specific examples cited by Hurter, and there are many more in "The Art and Practice of Medical Writing."—Extract, Editorial, *J. A. M. A.*

What about "intestinal flu"?

OBITUARY

Willis J. Redfield, Omaha; native Nebraskan, born at Gretna; Creighton University School of Medicine. 1900; in practice successively at Union, Wood River. North Platte, Grand Island and Omaha; retired about four years ago on account of ill health; former member, Nebraska State Medical Association; major in the medical corps during the World War; died September 22, 1934, aged fifty-eight years. A widow and son survive. Dr. J. B. Redfield, North Platte, is a brother.

William J. Neely, Nampa, Ida.; retired; National University of Arts and Sciences, Medical Department. St. Louis, 1876; veteran of the Civil War; at one time in practice at Kearney, Nebr.; died September 2. 1934, aged ninety-three years.

Thomas H. Ensor, Omaha; retired; Washington University School of Medicine 1891; physician at South Omaha for many years; at one time mayor of South Omaha; died October 15, 1934, at Detroit. Mich., aged about seventy-six years. A family survives. Dr. R. R. Ensor, Omaha, is a son.

Leigh H. Womble, Mitchell, Nebr.; Nebraska University College of Medicine, 1933; in practice at Mitchell since August of this year; died of a gunshot wound received in the premature discharge of a shotgun in the hands of a hunting companion, October 1, 1934, aged twenty-four years. A widow survives.

TUBERCULOSIS ABSTRACTS

TUBERCULOSIS AND MENTAL DISEASE

At the Longview State Hospital for Mental Diseases in Cincinnati there has been a tuberculosis death rate for the past few years of 0.7 per cent. This is more than ten times the rate for the state as a whole. Even higher rates are found in other mental hospitals. Patients with dementia praecox so often die of tuberculosis that some writers consider the "schizoid type" as "constitutionally predisposed" to phthisis. Others maintain that dementia praecox may be itself a peculiar manifestation of tuberculosis infection. Lowered resistance due to institutional conditions and increased exposure to massive infection have also been considered important factors.

Clinical examination of 2,200 patients at the Longview Hospital led to the discovery of 68 pulmonary tuberculolsis cases. Due to inadequate facilities such patients were found in more than a half dozen wards. The number of cases compares favorably with other hospitals in the state but undoubtedly it would be increased by more thorough examinations utilizing laboratory and X-ray criteria more freely.

Only 10 per cent of the tuberculous patients had been admitted since the beginning of last year as compared with more than 20 per cent of non-tuberculous patients admitted during the same period. This seems to indicate that the incidence of the disease increases with the duration of confinement in the institution. The tuberculous patients averaged less than 35 years of age while the average age of all patients in the institutions is more than 40 years.

Incidence of the disease was lower among the senile and syphilitic groups and higher among the patients with so-called "constitutional psychoses." Patients with tuberculosis, especially those in the male tuberculosis ward, do not appear to be underweight probably because of special nutrition efforts. Dementia praecox patients showed little more tuberculosis than did those with manic-depressive psychoses, although their nutrition did not appear to be as well maintained.

BODY BUILD

The relative width of the body pelvis gives one of the simplest and most constant indices of body build. The relative width of the bony pelvis of tuberculosis patients at Longview was slightly narrower than that of the entire patient population, but little different than that of the other patients of the same age. Dementia praecox patients appeared narrower than those with manic-depressive psychoses, but when only patients in the same age group are compared the differences in body build between the various types of mental disease, as shown by this index, vanish.

It seems clear that the incidence of clinical tuberculosis in this hospital increases with the length of stay in the institution, but is not appreciably affected by body build or type of psychosis. The deduction, after eliminating all known factors, is that the tuberculous disease develops not as a result of the mental disease per se, or as its cause, but from the condition of confinement and exposure to infection resulting therefrom.

INCIDENCE OF INFECTION

The entire hospital population was tested with tuberculin. For safety and convenience in dealing with unruly patients the Pirquet technique was used throughout, scarifying through Old Tuberculin with the Pirquet chisel on the flexor surface of the left forearm and reading in 48 hours with a check reading in five days. A few positives missed by the Pirquet technique might have been revealed by larger doses of tuberculin given intracutaneously but not sufficient to make any significant differences in this study.

There were marked differences in the incidence of the reactions on different wards, more than a quarter of patients in admitting wards being completely negative, while on the wards containing active cases of the disease less than half that number failed to react. Less than 20 per cent of the patients on the admitting wards showed a strongly positive reaction as compared to more than twice that number on the remaining wards and an even higher proportion on the wards in which patients with active tuberculosis were clinically recognized.

There were striking differences in reactions, according to length of time patients had been at Longview. More than a quarter of patients admitted during the past five years gave negative tests while of those admitted prior to that time, only one-sixth are now negative to this test. Increase in positive reaction with increase in duration of stay in the Institution is marked among both men and women. Mere increase of age is not responsible for increased incidence of positive reactions because new admissions average a somewhat higher age incidence than do the surviving population of the hospital, and examination of patients of various ages shows little tendency to increase in positive reactions among the older groups.

Apparently the hazard of becoming infected with tubercle bacilli while in the mental hospital is much higher than it is in the general population.

Attempt at segregation of tuberculous patients at the institution, admittedly inadequate as it is, during the past few years has been marked by a drop in the mortality rate. Even greater success is presaged if the policy of segregation of active cases is more thoroughly carried out. The doctrine of "constitutional types" underlying predisposition to mental disease and to tuberculosis is not supported by this study.

Tuberculosis and Mental Disease, Emil Bogen, Esther Bogen Tietz, and Major Frank Grace, Am. Rev of Tuber., September, 1934.

AUXILIARY NEWS NOTES

Mrs. Henry Miner, State President, gave a very lovely luncheon at the Lincoln University Club on October 1st, preceding a board meeting. Those present were: Mrs. C. C. Tomlinson, Omaha; Mrs. C. L Hustead, Falls City; Mrs. Elmer Hansen, Lincoln; Mrs. J. M. Woodward, Lincoln; Mrs. Earl Farnsworth Grand Island; Mrs. J. G. Woodin, Grand Island; Mrs F. A. Long, Madison; Mrs. F. W. Heagy, Omaha; Mrs. W. H. Stokes, Omaha; Mrs. C. W. Pollard, Omaha; Mrs. D. D. Stonecypher, Nebraska City; Mrs Roy Whitham, Lincoln; Mrs. Miles Breuer, Lincoln; Mrs. Floyd Rogers, Lincoln; Mrs. E. W. Rowe, Lincoln; Mrs. Jay Keegan, Omaha; Mrs. H. W. Benson, Oakland; Mrs. B. F. Williams, Lincoln; Mrs. H J. Lehnhoff, Lincoln.

Mrs. Tomlinson reported on the National Convention.

Mrs. Stonecypher told of plans for the speakers bureau by which lay organizations might obtai speakers on medical subjects.

Much enthusiasm was shown over Mrs. Pollard' splendid program for this year.

Mrs. Breuer emphasized the fact that getting Hygeia into the hands of the laity was more importan than the selling of it.

* * * * * *

Mrs. Lucian Stark of Norfolk is running for th Legislature.

* * * * * *

About twenty-five women from Dodge, Washington and Burt County were present at the meetin of the Tri-County Auxiliary on Sept. 24th at the Hote Pathfinder. After presenting the splendid progra sent us by Mrs. Pollard we followed the discussio by a note to alternate our social meetings with round table study of the program, having a speake of possible. Miss Alice Marshell, Executive Secretary of the Nebraska Tuberculosis Association, ga us a brief history of the origin of the Christmas Se and the first attempt to isolate the T. B. germ, including early methods of treatment. She followe this interesting discourse with suggestions concerning the management of our seal sale and effecti ways of expending our money.—(Mrs. Benson).

The newly elected officers of the Woman's Auxilary to the Omaha-Douglas County Medical Society re as follows:

Mrs. J. Jay Keegan, President.
Mrs. J. Harry Murphy, Vice President.
Mrs. Frank Conlin, Secretary and Treasurer.
Directors: Mrs. C. W. Pollard, Mrs. A. J. Offerman, Irs. Calvin Davis, Mrs. J. F. Hyde.

Chairmen of Committees are as follows:
Courtesy—Mrs. Palmer Findley.
Attendance—Mrs. B. B. Davis.
Health Education—Mrs. C. W. Pollard.
Public Relations—Mrs. C. R. Kennedy.
Membership (Co-chairmen)—Mrs. L. A. DeLanney, Irs. W. P. Haney, Mrs. J. F. Hyde.
Publicity—Mrs. John Freymann.

* * * * * *

The first meeting of the year of the Woman's Auxliary to the Omaha-Douglas County Medical Society vas held Friday afternoon, September 21st, at the ome of Mrs. Rudolph Rix.

Mrs. J. Jay Keegan, President, gave a short outine of the work planned for the year, stressing the act that all activities would focus on the advancenent of health education.

Mrs. C. W. Pollard, Chairman of Health Educaion, gave a short talk on the work to be pursued by er committee.

The business meeting was followed by tea, the ollowing assisting Mrs. Rix: Mesdames J. J. Keegan, J. Harry Murphy, Frank Conlin, A. J. Offerman, C. W. Pollard, Calvin Davis, J. F. Hyde, George Niehaus, Palmer Findley, B. B. Davis, C. R. Kennedy, L. A. DeLanney, W. P. Haney, John Allen and John Freymann.

* * * * * *

The Nebraska Medical Auxiliary has organized a Speakers' Bureau which consists of physicians throughout the state who have volunteered to make talks at health programs given by lay organizations. It furnishes a convenient and authentic source for securing health and medical instruction to the public.

* * * * * *

The Woman's Auxiliary to the Otoe County Medical Society gave a benefit card party at the Nebraska City Country Club on the evening of October 28. The proceeds will be used for assisting the hospital with supplies used for charity patients. Light refreshments were served and prizes were awarded for highest scores.

—Mrs. R. H. Whitham,
Publicity Director, Lincoln.

CALENDAR AND PROGRAMS FOR THE LANCASTER COUNTY MEDICAL SOCIETY FOR THE CURRENT SOCIETY YEAR

November 6, 1934

Symposium—"High Voltage X-ray"
Clinical Aspects—Dr. Roscoe Smith.
Physics—Mr. Folsom.
Pathology—Dr. Marshall Neely.

November 20, 1934

Medical Economics Committee Report.

December 4, 1934

President's Guest—Dr. Henry F. Helmholtz, Rochester, Minn.

December 18, 1934

Annual Business Meeting.

January 1, 1935

"A Technique in the Handling of Ruptured Appendices"—Dr. Chas. H. Arnold.
"Amebiasis"—Dr. Geo. Underwood.

January 15, 1935

Ladies' Night.

February 5, 1935

"The Value of the Electrocardiogram"—Dr. O. A Reinhard. (Based on a Review of 450 or 500 Records)
"Present Status of Prostatic Surgery in Lincoln"—Dr. A. D. Munger and Dr. E. E. Angle. (Based on Hospital Records).

February 19, 1935

"The Problem of Bleeding"—Dr. E. Burkett Reed.
"Fluid Administration in Operative Cases"—Dr. I. C. Munger, Jr.

March 5, 1935

"Mental Mechanisms and Methods of Therapy in Post-Traumatic Neurosis"—Dr. B. F. Williams.
"Splenectomy"—Dr. Roy H. Whitham.

March 19, 1935

"Non-tropical Sprue"—Dr. John C. Thompson.
"Personal Experiences in Allergy"—Dr. H. B. Mueller.

April 2, 1935

Visiting Doctors' Program (By Representatives of Gage, Saline and Seward Counties).

April 16, 1935

"Affective Disorders in General Practice"—Dr Miles J. Breuer.
"Myopia"—Dr. J. J. Hompes.

May 7, 1935

"Fractures of the Forearm"—Dr. Fred Ferciot.
"The Relation of Blood Proteins to Tissue Edema"—Dr. Clarence Elliott.

THE SOCIETIES

The first regular meeting of the **Omaha-Douglas County Medical Society** for the current society year was held September 11, Dr. Rudolph Rix, president in the chair.

Dr. B. M. Kully of the St. Joseph Hospital Staff brought before the society a patient who had suffered from carcinoma of the larynx. He had successfully recovered following laryngectomy and Dr. Kully presented a specimen and slides of tissue sections. The patient appeared before the society and demonstrated the use of an artificial larynx furnished through the courtesy of Mr. Cozad of the Telephone Company.

Dr. Rix congratulated the members on the wonderful turnout of committee chairmen at the Council Meeting and expressed his delight at the fine way in which the committees were functioning. He stated that it was most gratifying to the officers as well as to the society at large.

The scientific session consisted of three papers on the subject of the enlarged prostate. Dr. William Schmitz spoke on "The Suprapubic Operation," Dr. C. A. Owens on "Perineal Prostatectomy" and Dr. T. D. Boler on "Trans-urethral Resection." Each speaker was limited to twenty minutes.

Dr. Edwin Davis and Dr. Charles McMartin opened the discussion which followed. Dr. J. F. Langdon. Dr. W. L. Ross and Dr. G. V. Caughlan of Council Bluffs joined in the discussion which followed. The chairman called upon Dr. Schmitz to close the discussion.

At the regular meeting of September 25, President Rix called upon Dr. R. Russell Best to introduce the guest speaker of the evening, Dr. Richard H. Overholdt, a former Omahan and now associated with the Lahey Clinic, Boston, Massachusetts.

After a most inspiring address by Dr. Overholdt upon "The Newer Concepts of Chest Surgery," together with the presentation of a series of slides pertaining to cases which had come under his observation, Dr. Rix opened the meeting for discussion. Dr. J. W. Duncan led in the discussion and was followed by Dr. J. D. Bisgard, who presented slides and specimens of cases he had observed. Dr. Kelly, Dr. Thompson and Dr. M. C. Howard also joined in the discussion. Dr. Overholdt was then called upon to answer the questions which had been asked and to close the discussion.

Dr. Rix expressed his appreciation to Dr. Overholdt for his fine address and commended him highly on his achievements. He called for a rising vote of the audience in expression of their appreciation.

A joint meeting of the **Ninth and Tenth Councilor Districts** was held at Kearney, October 9. The program was as follows:

Dr. Charles F. Moon, of Omaha, "Practical Obstetrics"; Dr. Stanley J. Welch, of Lincoln, "Estimating the Surgical Risk in Thyroid Cases"; Dr. W. D. McGrath, of Grand Island, "Angina Pectoris—Symptoms"; Dr. Juul C. Nielson, Ingleside State hospital, "When You Are Committed."

Dr. Joseph Bixby, of Geneva, president of the state association, spoke at the dinner, as did Dr. C. A. Selby, North Platte, state president-elect.

On hundred were present at the meeting.

Dr. A. W. Anderson, Lexington, was elected president.

The **Scotts Bluff County Clinical Society** featured a program for physicians in the valley towns from Torrington, Wyoming, to Broadwater, Nebraska. Twenty-five attended. The program was put on by Dr. L. D. McGuire, Omaha, who spoke on "General Abdominal Surgery" and "Diseases of the Thyroid," and by Dr. M. C. Howard, Omaha, who spoke on "Gastric and Duodenal Ulcer." Clinical cases were presented and discussed by local men.

About forty doctors attended the **Southwest Nebraska Medical Society** at McCook, September 13. Following a dinner the following program was rendered:

"The Office Treatment of the Patient With a Rectal Ailment," Louis E. Moon, M. D., Omaha.

"The Early Diagnosis of Brain Tumor With Indications for Encephalography," A. E. Bennett, M. D., Omaha.

"Foot Infections—Diagnosis and Treatment," Manuel Grodinsky, M. D., Omaha.

Dr. Claude Selby, North Platte, president-elect of the Nebraska State Medical Association, spoke on the Federal Emergency Relief as it affects Nebraska physicians.

The same society held a meeting at McCook, November 12, with the following program:

J. E. M. Thomson, M. D., of Lincoln, spoke on "Fixed Traction With Kirschner Wire, Used in Treatment of Certain Fractures." Discussion was led by Dr. R. R. Reed.

"Pertussis", by C. R. Carlson, M. D., of Wauneta, with discussion by Dr. John Stewart of Stratton, and "Cylic Vomiting in Children," by C. W. Dewey, M. D., of Danbury, with discussion by Dr. K. W. Brimmer completed the program.

The program was preceded by a banquet. There was a good attendance.

Dr. and Mrs. H. W. Saylor, Bruning, were hosts to the **Thayer County Medical Society** at a dinner served at the city hall, Bruning, September 20.

A program of unusual merit was presented before the **Third Councilor District Medical Society** at Beatrice, October 16. There was an afternoon and an evening meeting with a 6:30 dinner.

"The Treatment of Pneumococcic Pneumonia," W W. Waddell, M. D., Beatrice.

"Middle Ear Infection," Stanley Zemer, M. D Lincoln.

"Kidney Infection," A. D. Munger, M. D., Lincoln.

"The Irritable Bowel and Its Treatment," John C Thompson, M. D., Lincoln.

"The Set-Up of the 'NERA' With the Physician,' K. S. J. Hohlen, M. D., Lincoln, State Medical Relie Administrator.

"Hypertension," Melvin W. Binger, M. D., of th Mayo Clinic, Rochester.

"Some of the Practical Problems of Tuberculosis at the Present Time," John F. Allen, M. D., Omaha.

"A Simple Method of Infant Feeding," Clayton G Weigand, M. D., Omaha.

"The Toxemias of Pregnancy," Harley E. Anderson M. D., Omaha.

The **Seventh Councilor District Medical Society** me at the Girls' Training School, Geneva, October 18 with Dr. Don Stansberry, Geneva, president.

An afternoon and evening program was offered:

"The Diagnosis of the Acute Non-Traumatic Abdomen," R. C. Kirchman, M. D., Wilber.

"The Nature and Treatment of Infectious Arthritis," Miles J. Breuer, M. D., Lincoln.

"Intra-cranial Injuries of the New Born," Illustrated, W. C. Becker, M. D., Lincoln.

"Surgery of Acute and Chronic Empyema," Joseph Weinberg, M. D., Omaha.

"The Use of Blood Transfusion in General Practice," J. M. Porter, M. D., Concordia, Kan.

Dinner—6:30 p. m. Guests of Fillmore County Medical Society.

Address, Joseph Bixby, M. D., President Nebraska State Medical Association, Geneva.

"Medical Thought versus Present Social Trends," H. M. Jahr, M. D., Omaha.

Dr. Claude Selby, North Platte, president-elect Nebraska State Medical Association, spoke on medical relief for the indigent.

HUMAN INTEREST TALES

Dr. G. W. Bartlett has moved from Primrose to Belgrade.

Dr. G. O. Remy, Ainsworth, recently visited relatives in Chicago.

Dr. B. B. Hauser, Hooper, attended proctologic clinics in Chicago recently.

Dr. and Mrs. C. P. Fox, Morrill, visited recently in Wisconsin and Missouri.

Dr. Freeda M. Clark, Tilden, recently underwent a serious operation in Omaha.

Dr. M. A. Mack, recently in the Civilian Conservation corps, has located at Crete.

Dr. F. A. Lemar, Columbus, attended clinics in New York for a month, from mid-September.

Dr. Lincoln Riley, Wisner, visited his son, Dr. W. K. Riley, at Fort Lyons, Colorado, recently.

Dr. P. H. Carrothers, Broken Bow, suffered serious injuries in an auto accident recently.

The marriage of Dr. Leon S. McGoogan, and Miss Vera M. Kelley, Omaha, occurred October 20th.

Dr. C. H. Temple, formerly of Campbell, has moved to Lincoln. His health has not been up to par lately.

It is with regret that we report the death of Mrs. Minnich, wife of Dr. C. S. Minnich, Cambridge, in August.

Dr. Guy Goodrich, Omaha police surgeon, was seriously injured in an auto collision the latter part of September.

Dr. and Mrs. J. W. Gill, Chambers, motored to points in Missouri and Illinois, ending at the World's Fair during September.

Dr. M. H. Carrig, for about five years located at tuart in association with Dr. F. L. Wilson, has moved to St. Charles, Ill.

Dr. E. E. Boyd, Central City, was elected permanent hairman of the Democratic Third District Congressional committee recently.

Dr. C. E. Slagle, Alliance, suffered severe electric hecks by accidental contact with a high voltage wire n his development room.

Since his return from Alaska, Dr. Victor E. Levine, Omaha, has appeared before a number of luncheon nd social clubs as speaker.

A former Nebraska boy, Dr. Archibald Nissen, now leading Boston physician, visited his ancestral home t St. James late in September.

Dr. E. J. Oxford. Chambers, following an auto accident some time ago, was taken to an Omaha hospital, or treatment of broken vertebra.

Dr. and Mrs. F. A. Pollack, Norfolk, went to the meeting of the American College of Surgeons at Boston and other points in the New England and Midle states.

Dr. L. P. Martin, for some years located at Cook, as moved to Anaconda, Montana, and will practice n association with Dr. F. J. Malloy, a medical colege classmate.

BOOKS RECEIVED

TUBERCULOSIS OF THE LYMPHATIC SYSTEM: By Richard H. Miller, M. D., F. A. C. S., Assistant Professor of Surgery, Harvard Medical School: Associate Surgeon, Massachusetts General Hospital. The Author presents, in a practical way, the principal acts of interest in the biology and clinical features of this form of tuberculosis, based on an extensive experience at the bedside and in the clinic. Octavo, 248 pages. The MacMillan Co., New York. Price $4.00.

INSTITUTIONAL CARE OF MENTAL PATIENTS N THE UNITED STATES: By John Maurice Grimes, M. D., four years a staff member of the Council on Medical Education and Hospitals of the American Medical Association. Octavo, 138 pages. Published and distributed by the author, 1816 North Clark St., Chicago, Ill. Price $3.00.

GANGRENE DUE TO THROMBO-ANGIITIS OBLITERANS: FURTHER EXPERIENCES WITH TREATMENT

Saul S. Samuels, New York (*Journal A. M. A.*, Feb. 10, 1934), reiterates his previous conclusion to the effect that extreme conservatism in thrombo-angiitis obliterans is not only desirable but obligatory. During the past eight years he has examined and treated more than 300 cases of thrombo-angiitis obliterans and in only one instance was it necessary to perform an amputation of the leg. This amputation occurred in a patient, aged 57, in whom the gangrene had spread upward from the plantar surface of the foot to the ankle and heel. This location of the gangrenous process had destroyed the entire weight-bearing portion of the extremity and had thus removed every possible chance of healing into a stump of any value to the patient. Because of the great importance of the minute details of therapy in the handling of these cases, the author describes carefully all the points he has learned in the past ten years which he believes are of value in the successful healing of gangrene. It must be remembered that no single remedy or procedure is advocated in these cases. It is, on the contrary, the intelligent combination of various fundamental factors that he wishes to emphasize in this discussion, which consist of rest in bed, prohibition of smoking, intravenous injections of hypertonic saline solution and surgical cleanliness of ulceration and of gangrenous areas. In twelve cases of gangrene and ulceration reported by the author, healing was accomplished by simple measures, without the use of any operative procedure. Sympathectomy is unnecessary in the treatment of thrombo-angiitis obliterans.

IMPORTANCE OF CLINICAL-PATHOLOGIC CONFERENCES IN WORK OF PRACTITIONER AS TEACHER

Reginald Fitz, Boston (*Journal A. M. A.*, July 22, 1933), states that since more than 100,000 of the 125,000 practicing physicians in this country are directly associated or affiliated with hospitals, it follows that the vast majority of physicians who attend the annual meeting of the American Medical Association must occupy responsible hospital positions, have working under them varying numbers of interns and residents, and, therefore, are to be considered as actively engaged in the teaching of medicine. He believes that many practitioners are not wholly alive to their responsibilities as teachers and do not carry on such teaching of medicine as they are expected to perform, as enthusiastically and vigorously as is desirable. The importance of clinical-pathologic correlation as a means of teaching medicine has been recognized for many years. Yet in a group of 664 hospitals which the Council investigated in 1931, from this point of view, only 86 of them (13 per cent) performed necropsies in more than one-half of their fatal cases. These figures suggest that there still exists a good deal of inertia toward such an important method of instruction on the part of the hospital teaching staff. The author discusses the methods employed at the Cabot Clinic, the Mayo Clinic and the Peter Bent Brigham Hospital for using to the best advantage the pathologic material offered.

ROENTGEN EVIDENCE OF HEALING IN DUODENAL ULCER

Daniel M. Clark and Milton J. Geyman, Santa Barbara, Calif. (*Journal A. M. A.*, Jan. 13, 1934), discuss the compression technic, the significance of niche disappearance, the time of the disappearance of the niche, the relation of the niche to the contour of the deformity and the efficiency of various forms of treatment as they pertain to the evidence of healing in duodenal ulcer presented by the roentgenogram. From this study the authors conclude that in more than half of all cases of duodenal ulcer the roentgen ray has a definite value in determining the response of the lesion to treatment. Roentgen disappearance of a duodenal ulcer niche following treatment indicates a favorable initial response but does not mean that the ulcer is completely healed. There is a wide variation in the amount of time required for disappearance of the niche. As a general rule, duodenal ulcers heal more slowly than gastric ulcers. Contour deformities of the barium-filled bulk are not entirely dependable in the diagnosis of duodenal ulcer, and they are of little or no value in determining the response of a lesion to treatment.

THE POSTTRAUMATIC NEUROSES

George W. Hall and Roland P. Mackay, Chicago (*Journal A. M. A.*, Feb. 17, 1934), point out that a study of a great number of posttraumatic neurosis cases reveals at once that the posttraumatic neuroses do not differ in any essential way from most other, nontraumatic, neuroses. They can all be divided into groups of considerable clinical value, according to their outstanding symptomatology. The majority of cases may be classified into posttraumatic neurasthenia, posttraumatic anxiety neurosis and posttraumatic hysteria. The authors give the principal clinical features of these three types of neuroses and discuss the psychology of the posttraumatic neuroses. Under treatment they state that the patient should not be antagonized, that financial matters (of treatment) should be settled at once and not in protracted payments by which the question of the patient's disability is constantly kept open. The patient should be put to some form of work so that his interest is centered on something else besides himself. Medication, various forms of physical therapy or electrotherapy are useful in giving him reason to expect improvement and a basis for relinquishing his symptoms. That such treatment may lack a physiologic rationale, in view of the fact that no physical basis exists for his symptoms, is neither here nor there. The psychologic rationale is ample warrant for such procedure. With these methods, encouragement and optimism find an important place when used tactfully and reasonably.

Patient: "I understand fish is good for the brain. Can you recommend anything special?"

Doctor: "Well, you might begin with a whale."

ROSTER OF OFFICERS—1934

Joseph Bixby, Geneva, President	193
C. A. Selby, North Platte, President-elect	193
George L. Pinney, Hastings	193
William Shepherd, Rulo	193
R. B. Adams, Lincoln, Secretary-Treasurer	193

COUNCILORS

A. P. Overgaard, Omaha, Secretary	193
W. R. Boyer, Pawnee City, Chairman	193
R. J. Lehnoff, Lincoln	193
E. L. Brush, Norfolk	193
Homer Davis, Genoa	193
H. E. Potter, Fairbury	193
D. D. King, York	193
W. J. Douglas, Atkinson	193
R. D. Bryson, Callaway	193
L. W. Rork, Hastings	193
C. A. Selby, North Platte	193
A. L. Cooper, Scottsbluff	193

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	193
B. F. Bailey, Lincoln	193

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincoln
Morris Nielsen, Chairman Medical Section	Blair
J. D. McCarthy	Omaha
J. W. Duncan, Chairman Surgical Section	Omaha
A. L. Miller	Kimball

CANCER COMMITTEE

James F. Kelley, Omaha, Chairman	1939
Geo. Covey, Lincoln	1938
W. C. Harvey, Gering	1937
John Buis, Pender	1936
J. M. Willis, McCook	1935

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincoln
J. W. Duncan	Omaha
R. W. Fouts	Omaha
E. W. Rowe	Lincoln
L. F. Egan	Hastings
R. B. Adams, Ex-Officio	Lincoln

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madison
A. F. Tyler	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex-Officio	Lincoln

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincoln

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincoln
F. Heagey	Omaha
F. W. Buckley	Beatrice

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omaha
C. A. Hull	Omaha
R. B. Adams	Lincoln

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
John T. Myers	Omaha
J. S. Welch	Lincoln
C. W. M. Poynter	Omaha

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

'ol. 19 Norfolk, Nebraska, December, 1934 No. 12

CONTENTS

Page
Fixed Skeletal Traction in the Treatment of Fractures by Use of the Kirschner Wire Technique in Plaster Casts, J. E. M. Thomson, A. B., M. D., F. A. C. S. 441
Acne Vulgaris and the General Practitioner, Donald J. Wilson, A. B., M. D. 444
The Larynx and Its Relation to Bronchoscopy and Esophagoscopy, James P. Rigg, M. D. 448
Methods of Infant Feeding as Used in the Newborn Clinic, University of Nebraska College of Medicine the Past Three Years. C. G. Weigant, M. D. 451
Pseudoparalysis of Childhood, John V. Reilly, M. D. 453
Report of Cases of Poisoning Due to Shoe Dye, R. E. Harry, M. D. 455
A Case of Anthrax Septicemia, With Treatment by Massive Doses of Anti-Anthrax Serum, Gustav N. Nilsson, M. D. 457
Massive Strangulation of the Intestine Due to a Non-Adherent Meckel's Diverticulum, C. H. Waters, B. Sc., M. D., F. A. C. S. 458
Tubercular Appendicitis, Max Emmert, M. D. 459

Page
EDITORIAL—
Postgraduate Courses at Home 460
Privileged Communications 461
Research Laboratories of Lilly Formally Opened 462
End of Volume 19 463
Blood Pathology in Preoperative Surgery 463
State Medicine Not in Sight 464
Celebrating Dr. P. H. Salter's Fifty Years of Medicine 464
Fever Therapy Research Project 465
Canton Hospital 465
Clinic Day at Bryan Memorial Hospital 466
Indian Obstetrics — Indian Abortions — Indian Immunity to Infections 466
Editorial Paragraphs 467
Obituary 469
Scientific Exhibit, Atlantic City Meeting, A. M. A. 469
Auxiliary News Notes 469
The Societies 470
Human Interest Tales 471

FIXED SKELETAL TRACTION IN THE TREATMENT OF FRACTURES BY USE OF THE KIRSCHNER WIRE TECHNIQUE IN PLASTER CASTS*

J. E. M. THOMSON, A. B., M. D., F. A. C. S.,
Lincoln, Nebraska.

The historical data with respect to the use of keletal traction is too extensive for review in is paper. However, the earliest general praccal application of this principle was devised by teinman and presented to the profession in 1907 efore the medical society of Bren. Since that me various adaptations have followed the use f the pin that bears his name. Of these, perps the so-called "ice-tongs" are among the ore popular.

The effectiveness of this method of traction as so outweighed the objections that have been ised that it enjoys almost unanimous populary in fracture surgery. The advantages of skeletal traction might be briefly outlined as follows:

1. It is direct, in that it is not dependent upon the soft tissue for its pull, as traction is made directly upon the fractured fragment.

2. There is better control of the fragments, as thereby it is possible to turn, rotate, or change the line of the pull at will.

3. It requires less weight to overcome over-riding, because of the directness and the positiveness of the traction.

4. The traction is constant and equal on both sides of the fragment.

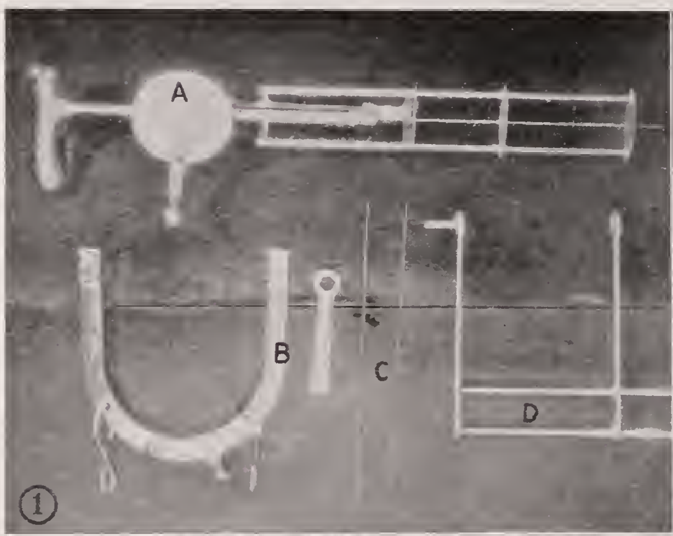
5. It is more comfortable, in that there is no extensive skin irritation, or interference with circulation, such as often accompanies adhesive traction.

6. The results are far more satisfactory, in many instances, than can possibly be expected of ordinary skin traction.

7. When splints are used they can be so adapted that joints below, and perhaps above the fracture,

---

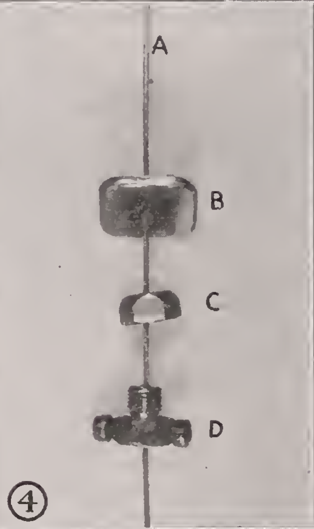
*Presented before the Lancaster County Medical Society at ncoln, Nebraska, May 1, 1934.



①

②

③



④

⑤

⑥

⑦

Legends on Following Page

ay be mobilized, in part, during the period of treat-ent.

The chief objections to the method are:

1. Slipping, which sometimes occurs when "ice-ngs" are used.
2. Side-slip of the pin after a period of time.
3. That there is always a certain amount of soft ssue and bone necrosis about such apparatus which, fter removal, is often slow to heal, and when placed ear a joint causes periarticular changes of an ar-ritic or inflammatory character.
4. That there is the possibility of infection at the oint of bone exit and bone entrance of this foreign etal body.

The advent of the Kirschner stainless or hromium wire has to a great extent overcome nd minimized these objections, with perhaps the xception of the possibility of infection. Of ourse, strict asepsis is absolutely essential for ne success of any skeletal traction procedure. sloppy, surgical technique is always conducive infection. However, the introduction of the ire, which is very small, causes little soft tis-ue or bone damage, and gives little possibility or infection to arise. In the twenty-eight cases which we have used this method not a single nfection, or even moderate necrosis, at the point f entrance and exit of the wire has occurred. he drill point of this stiff, piano-string type of ire eliminates a great deal of the soft tissue and ony damage that ordinarily occurs as the result f driving a pin, or "ice-tongs" into the extrem-y.

The non-corrosive, stainless steel quality of his wire, bears a definite relation to the fact that here is little or no necrosis of the tissue through which it passes. The effectiveness of traction is dependent upon the tautness and tension put upon the wire by the lateral pull on its extremities through an accordion or tension bow that is furnished for use with this apparatus. When sufficient tension is established, and the wire is tuned to a sufficiently high pitch, strong pull can be put on the bow with but little or no bending of the wire.

Having been by early training and experience a devotee to the use of plaster of Paris casts and splints in the treatment of fractures, and having had considerable influence in the popularizing of the use of "fixed skeletal traction," it was difficult, at first, for me to visualize the possibilities of Kirschner wire adapted to these principles. This was particularly due to the fact that should Kirschner wire be used as fixed traction, it would mean the embedding of the entire apparatus—wire, bow and all—in the plaster of Paris cast. My Scotch instinct led me to feel that such a procedure would be too extravagant as a routine procedure.

Perhaps it might be well to explain what is meant by the term "fixed skeletal traction." This term implies first that the patient is placed on a fracture table. The skeletal traction is applied by pin, "tong," or Kirschner wire. Direct reduction of the fractured fragments is accomplished by the traction and counter-traction offered by the apparatus and fracture table, as well as by manual manipulation of the fragments. After this is accomplished, with full length, good anatomical alignment, and in the position of election for this particular fracture, an appropriate plaster of Paris cast is applied, and the skeletal traction apparatus imbedded into the plaster cast; thereby maintaining the traction and counter-traction on the fragments after the extremity has been released from the traction apparatus of the fracture table, so to remain during the course of treatment.

The intriguing excellent results of Dr. P. A. Bendixen of Davenport, Iowa, and Dr. Ralph Carter of Green Bay, Wisconsin, and others, with the Kirschner wire apparatus, so fired my enthusiasm that I immediately began to apply the fixed traction principle to the Kirschner apparatus. First the entire apparatus was fixed, then various clamps were devised to keep the wire taut after the bow was released; but, until recently, all such adaptations have had various draw-backs. However, my associate, Dr. C. Fred Ferciot, has devised a taut bolt that is inexpensive and completely effective—which is described with the illustrations—and serves as an

---

LEGENDS TO CUTS ON OPPOSITE PAGE

Figure 1

Apparatus essential for the application of Kirschner Wires:
  A. Telescope Drill.
  B. Tension Bow and Wrench.
  C. Kirschner Wires.
  D. Guide.

Figure 2

Fracture of shaft of tibia and fibula. Wire through lower hird of tibia embedded in plaster of Paris cast with bow in lace.

Figure 3

Fracture of shaft of tibia and fibula. Bow removed and taut olt in place.

Figure 4

Taut bolt assembly:
  A. Kirschner wire.
  B. Pressure plate.
  C. Nut for increasing tautness of wire.
  D. Bolt with set screw in head which grasps wire.

Application: After cast is set the pressure plate is pushed irmly against the damp cast, the nut having previously been crewed completely on the bolt. The bolt is pressed against the ressure plate and the set screw tightened on the wire. Twenty-our or more hours later the nut is unscrewed, making pressure gainst the plate and increasing or maintaining the tautness f the wire.

Figure 5

Fracture of lower third of tibia and fibula. Wire applied hrough the calcaneum with taut bolt in place.

Figure 6

Fracture of upper-third of humerous. Bow imbedded in spica ast, prior to application of taut bolt.

Figure 7

Fracture of lower-third of tibia and fibula. Wire through he calcaneum. Bow in place. Plaster of Paris splint of the ower extremity swung under an overhead frame.

excellent device for maintaining tension on the wire.

Fixed skeletal traction by our technique is as follows: The patient is placed on a fracture table with the extremity in a position to advantageously apply the necessary traction and counter-traction for the reduction. The area in the extremity through which the wire is to be passed is prepared by painting with tincture of iodine or merthiolate. The essential sterile drapings for strict asepsis are applied. Surgeon and nurses are prepared as though for a major surgical procedure. With a telescoping drill and guides the wire is passed through the proper bony portion of the extremity to accomplish the most adequate traction. Cotton collodion dressings at the entrance and exit of the wire are applied. The steel pressure base and taut bolt are slipped over the wire. The bow is then applied and clamped on and the wire tuned up to proper tautness. Traction and manual reduction are then accomplished by the use of the fracture table apparatus. Soft, heavy felt is applied over the bony prominences, and at the extremities of the cast. Seldom is sheet-wadding used. Anterior-posterior splints of sufficient length are moulded to the parts to be encased, and brought firmly against the extremity with a three-inch crepe paper bandage. This is followed by reinforcement with circular plaster of Paris bandages. After the cast is completed the steel pressure plates are pushed firmly against the cast and the screws tightened to the wire just as close to the pressure plate as possible. No particular force is made, however, against the cast while it is soft. The patient is returned to bed and placed under a Balkan frame, merely to give the extremity the most advantageous resting position. Unless the casts are under hourly supervision they should be split to prevent the possibility of constriction and isch
mia, tightness and swelling. This, however,
seldom essential where adequate fracture supe
vision is maintained. Then after one or tw
days, when the cast is thoroughly dry and x-ra
check-up shows that the fracture is in satisfa
tory position and alignment, the taut bolts ar
tightened firmly against the wire through th
holding set screw in the head of the bolt, and th
bolt nut is turned with a wrench until the taut
ness is released from the bow; then the bow
removed and the wire ends cut off during the r
mainder of treatment.

The advantages of this taut bolt are:

1. It is absolutely effective in maintaining th
proper tune and tautness in the wire.

2. It is inexpensive to procure.

3. It does not have to be covered or held by plast
of Paris to make it effective.

4. It is possible, by this procedure, to allow a cer
tain number of fractures of the extremities to be
and around and bearing weight much earlier tha
would otherwise be possible.

5. It is particularly adaptable when two wires ar
used, one above and one below the fracture, as
leg and arm fractures.

The unpadded plaster of Paris splints or cast
if properly suspended after their application, sel
dom interfere with the circulation, and actual
often minimize the swelling. They are thin an
can be easily split and spread if there is any im
pairment of circulation and again tightened
after swelling has disappeared.

This method, by allowing the patient often
become ambulatory early in the course of treat
ment, has an influence in keeping up a mor
normal activity, thereby maintaining muscle ton
icity and decreasing the period of disability an
convalescence.

ACNE VULGARIS AND THE GENERAL PRACTITIONER*

DONALD J. WILSON, A. B., M. D.,
Instructor in Dermatology, University of Nebraska, College of Medicine.
Omaha, Nebraska.

Acne vulgaris is a disease of the sebaceous glands and ducts developing in a familial type of skin, occuring especially in the adolescent although other ages may be affected and characterized by oily, muddy skin, large pores, comedones, or blackheads, seborrhea, papules, pustules, nodules, cysts and scars, and if untreated usually clears spontaneously between twenty-five and thirty-five years of age.

The areas most commonly involved are th
cheeks, chin, forehead, back, neck, shoulders an
buttocks.

OCCURRENCE AND IMPORTANCE

Acne is a very common disease occurring
some degree in 59.6% of otherwise normal girl
between the ages of six and eighteen years of ag
and in 68.5% of all normal boys of six to nin
teen years of age. In fact every twelfth girl an
every fifth boy from six to nineteen years of ag

---

*Presented before the Omaha Mid-West Clinics, November-December, 1933.

suffering from a severe type of eruption while very fifth girl and every second boy has some cne. More severe in adolescence and early dulthood, it constitutes a social and psychological roblem as well as economic, the full import of vhich is not recognized by most physicians. Not few boys and girls have an inferiority complex ue primarily to acne vulgaris. Many of these ases could and should be cared for by the general physician.

PREDISPOSING ETIOLOGY

Acne is a disease of complex etiology. The o-called acneic skin is familial, this in itself iving rise in some to comedone formation. It is ot, however, until the development of the secndary sex characteristics, namely: the onset of ienstruation and the development of pubic and xillary hair, that true acne develops. Because nly 5.3% of seventeen year old girls and only 6% of eighteen year old boys in Block's series vere entirely free of comedones, it would seem hat some comedones are at least physiological. nd as Block says, "there is not much sense in ooking for special pathological processes in the ndocrine system." Block further states, "We re forced by the fact that in acne the normal hysiological action of a ductless gland—the sexal gland—on the skin leads through transition tages to a final effect which is pathological, a eal disease of the skin, namely acne."

Stokes and King are convinced that there is a usceptibility to the staphlococcus in acne cases vhich is more definitely inherited than a tendency o develop comedones, and that there is also a amilial factor in the type of diet and hygiene. If his is true, contributary factors become more important.

CONTRIBUTING ETIOLOGY

Many laboratory hours have been spent trying o prove the presence of hyperglycemia, hypercholesterolemia or hyperlypemia in acne without vail, and yet clinically exacerbations are frequent when the patient indulges too freely in arbohydrates (especially candy and pastry) or n fats (especially pork). It is not known just iow these exacerbations are produced, and we re admonished by Cleveland that the laboratory as not spoken the last word.

Occasionally a true allergy seems to be the ontributing cause, as milk in the case reported y Hoge, and pig fat in those reported by Wills.

Bromides and iodides have long been known o produce in certain persons an acneiform eruption. Shelmire has reported a series of cases vhich were due to the ingestion of iodized salt. I have frequently noted marked improvement in cases following the substitution of non-iodized salt for the adulterated product.

Anemia makes an acne case more recalcitrant to treatment and Sutton has recently brought out the value of liver diet when this factor is present.

A very substantial per cent of the long continued exasperating cases in which the patient has a moderately severe acne, even after the usual amount of x-ray treatment has been given will show marked improvement if not complete cure following the removal of infected teeth or tonsils. And it is surprising how often these infections are not clinically severe. On the other hand, the wholesale slaughter of tonsils as a treatment for acne cannot be sanctioned.

Of all the general contributing factors, gastrointestinal disfunction is probably the most important. Bulkley reported 45% of cases with some complaint of constipation or other gastrointestinal disturbances. Thirty-five per cent of Stricklers cases complained of some intestinal symptoms, while Ketron and King found hyperacidity in 48.1% of their group of thirty cases, retention in 36.6%, atony in 33.3%, ptosis in 40%, cecal stasis in 46.6%, colon stasis in 36.6% and right lower quadrant adhesions in 23.3%. Pearce and Valker have reported a series of fifteen cases in which the length of time required for passage of food through the gastrointestinal tract (as determined by the ingestion of a capsule containing 10 grains of carmine) was eight days. As far as the effect on the acne is concerned, it makes no difference whether the poor elimination is due to habit, to worry and fear, or to organic changes along the tract. I have seen several cases show marked improvement when a fear or worry complex was removed. Here again, the exact mechanism by which a constipation causes exacerbation of the acne eruption is now known; in fact, there are those who believe that diet and constipation have no effect on acne but with these I cannot agree although there are some cases in which this is true.

The woman with a more or less localized patch on her chin not infrequently has some pelvic pathology or mal-function and shows marked improvement if this can be corrected.

Not infrequently a patient with a mild acne or one limited to the face will suddenly develop new and numerous lesions on the lateral surfaces of the upper arms. This outbreak is often due to heat and usually clears much more rapidly than that in other areas.

Other general factors may play a part in certain cases and when they can be found, they should be corrected.

Oils and greases frequently contribute to the cause of acne as evidenced by a comparatively large number of cases with comedones, papules and pustules not in the usual acne location but in areas which are covered by greasy clothes such as the arms, legs, buttocks and lateral surfaces of the abdomen, as in oil station attendants.

It is worthy of note that cases of mild acne usually become worse at the age when the boy deems it no longer necessary for mother to wash his face with soap and water and the girl begins to use mother's cosmetics. As new lesions develop an attack is made upon them by the prospective patient's fingers. Through auto-inoculation new infections begin. Sooner or later many of these patients arrive at the beauty salon or barber shop where various packs, muds, massages, rolls, creams, etc., are used with little effect upon the acne, and new comedones develop.

Most dermatologists no longer believe that the acne bacillus is the actual cause of acne, but that it plays a part, all are agreed. Always the staphylococcus is present in the pustules.

PATHOLOGY

As puberty approaches, the sebaceous glands become more active and always there is an increased thickness of the horny layer; adding to this a poor cleansing with soap and water, the mouth of the duct is occluded and the pent up sebum becomes less liquid. Because the manufacture of sebum continues and the intra duct pressure increases the plug becomes broader and harder. not infrequently projecting beyond the surface of the skin. Oxidation due to bacterial action takes place in the outer end of the plug and the blackhead is produced. This comedone may act as a foreign body or the pyogenic organisms which can often be demonstrated in any normal gland now rapidly increase in the favorable culture media. Thus the papule and papulopustule are produced. The epithelium overlying the gland is thinned by pressure and often ruptures allowing the contents to escape. If, on the other hand, the epithelium does not rupture the increased pressure may force some of the contents through the already thinned wall and a cellulitis develops producing acne indurata. Further, if this cellulitis is so severe that massive destruction takes place, a dermal or subdermal abscess follows, the contents become organized or even partly replaced by granulomatous tissue necessitating curettement. Any lesion beyond the papule stage may terminate by extrusion of its contents or the entire lesion may be absorbed. In either event a scar follows.

The primary lesion of acne is the comedone and without it there can be no true acne.

DIAGNOSIS

Usually the diagnosis of acne vulgaris offers little difficulty as the oily muddy skin, comedones papules and papulo-pustules in the usual acne areas are characteristic. When a pre-existing acne is made worse by the ingestion of iodides or bromides, the lesions are usually larger and more uniform in size and shape. In a pure iodide or bromide acne there are few, if any, comedones and the eruption usually involves also areas no involved by true acne. Tinea sycosis and coccogenic sycosis are limited to the bearded region Follicular impetigo of Bockhart is much more superficial and comedones are absent. Papular or pustular syphilis can scarcely be confused on account of its distribution, generalized adenopathy and positive serology. Acne varioliformis aften involves the scalp, comedones are not a part of the picture, and it always leaves variola like scars. Small pox is accompanied by genera symptoms and lesions exist on other portions o the body.

TREATMENT

Treatment is naturally divided into two classes i. e., systemic and local. There is no reason why the general physician cannot treat successfully by far, the majority of his acne patients. It is absolutely imperative that the physician have the full cooperation of his patient, and in the juvenile cases, that of the family as well. No one treatment is as satisfactory as combined treatment.

Systemic Treatment. The diet must be controlled. no pastries, candies, chocolate, sodas, sundaes, jams, jellies, preserves, pork or gravies being permitted. A minimum of white and rye bread, biscuits, potatoes, macaroni, cheese and nuts may be allowed in most cases. Alcohol should be forbidden. A more liberal diet should be allowed after the acne is under control.

Faulty bowel function must be corrected, particularly does this apply to constipation. Remembering the statement of Fantus that practically al constipation below the age of twenty-five is habit usually three glasses of water before breakfast going to the stool immediately after breakfas with no book or magazine to read, but with a firm determination to succeed will establish a definite habit time in three to five weeks. Occasionally, because of the severity of the habi ome laxative in diminishing doses is needed. luid extract of cascara usually works well and necessary may be followed by diminishing oses of a mineral oil-agar preparation, preferbly without phenolphthalein.

Many patients have a moderate anemia which n the milder cases can be treated satisfactorily by ne administration of Fowler's solution or the acodylates, and in the more severe ones by some ood liver extract.

Bromides and iodides should not be used and odized salt should be discontinued.

Patients who make slow progress or remain ationary should be examined thoroughly to the nd that focal infection may be removed.

Vaccines are unreliable although occasionally ive good results.

Plenty of fresh air, exercise and sleep with as nuch freedom from worry as possible should be aken and the patient should be made conscious f the fact that he picks at his face much more han he thinks he does and this in itself retards ecovery.

Practically every patient with acne vulgaris lso has dandruff. True dry seborrhea is a rary Unless the scalp condition is properly treated ne acne response will not be the best possible nd not infrequently the acne returns after an pparent cure, if the scalp is neglected. When tarting anti-seborrhea treatment the scalp should e thoroughly washed twice a week with a stimuating tar soap. After two or three washings, nce a week will be sufficient. The hair should e brushed with a stiff bristle brush for at least ive minutes each day. This mechanically renoves some of the liquid sebum from the scalp nd distributes it along the shaft of the hair thus iminishing scaling. After the hair and scalp re thoroughly washed, a rinsing of hot water ollowed by a cold one is advised. in other words, hermal stimulation. A turkish towel with a modrate amount of massage is used for drying and good hair tonic is used each day.

The following formula is a very satisfactory ne:

Hydrarggyri chlor. corros.,	gr. III
Resorcin	oz. II
Ac. Salicylic	oz. ss
Glycerinae	oz. ss
Ol Bay	m. IV
Sp. Vini rectif 70% qs. ad	oz. VIII

Often the hair becomes oily although the scalp is clean. This condition can be improved by briskly massaging the hair and scalp with a dry turkish towel two or three times a week.

If the patient be a blond, chloralhydrate should be substituted for the resorcin.

Local Treatment. Not a few cases of mild acne will respond to the briefly outlined general treatment given above.

Ultra violet irradiations over the entire body, as well as locally, are valuable especially in the juvenile cases and particularly where pus is present.

Because all papules and pustules are secondary to the comedone it is clear that if the comedones are all removed there will be no secondary lesions. Many dermatologists insist on doing this little operation themselves, however, it is a rarity when some member of the family cannot be found who will do the work satisfactorily after a little coaching by the physician using a good comedone expressor. Comedones, papules and small pustules can be taken care of by this assistant. Small lesions are often converted into large indurated ones if the work is too vigorously done and a comedone which is resistant to moderate pressure should be left alone after the first attempt for two or three days when it usually responds easily to the second or third attack. Large pustules, nodules and cysts should be drained by the physician using a small sharp blade making a clean incision and if done before too much damage is caused by the inflammatory lesion an almost imperceptible scar will result.

Although many dermatologists are opposed to the use of hot and cold packs, I believe they are valuable. The patient should be given a direction sheet which is to be followed religiously and covers the following points:

(a) A turkish towel is wrung from hot water and applied to the face for two to five minutes by the clock. The time depends upon the type of skin, the type of eruption and the physician's experience.

(b) The comedones are removed as previously directed.

(c) The debris remaining on the surface is removed when the face is thoroughly washed with soap and water and a rough cloth. At first a mild soap is used and as the skin becomes harder to chap, tincture of green soap and even surgeons soap may be used.

(d) After drying, the entire face is gone over by squeezing it firmly between the thumb and forefinger. This squeezes onto the surface much liquid content of the sebaceous glands which prevents its hardening and forming comedones.

(e) A fat solvent such as carbon tetrachloride or equal parts of alcohol and ether may now be sponged on the face, or soap and water may again be used and rinsed off with hot water.

(f) Cold packs are now applied for two or three minutes. The use of ice is not advisable.

(g) After drying, Duhring's lotio alba

Zinc sulphate	4.0
Pot. sulphurette	4.0
Glycerine	6.0
Aq rosae qs ad	120.0

is applied. If a stronger application is desired, Kumafeld's lotion may be used:

Sulph. praecip	16.0
Pulv. camphorae	.65
Pulv. tragacanth	1.3
Aq calcis	60.00
Aq rosae	

(h) If creams have been used previously as a "cleansing agent," the above schedule should be carried out only once a day at first and later increased to twice a day. Severe chapping is not desired and if such occurs the applications are discontinued for a day or two. Pitting and sca ring can be markedly diminished by exfoliatin doses of ultraviolet following in as close succes sion as reactions will permit.

About 60% to 65% of average cases will b cured in six to twenty-four months by the abov method.

More poor results in the cure of acne are du to the failure to treat the concurrent seborrhe and a failure to remove the comedones than t any other cause.

X-RAY

Most general physicians are not equipped t give x-ray treatment. Although it is considere by far the most valuable single therapeutic ager we have in acne, it should be given by the special ist and does not fall within the domain of thi paper.

SUMMARY

1. Acne vulgaris is an extremely common dis order.

2. Acne vulgaris is a very important disease.

3. The general practitioner can successfull treat 60% to 65% of all cases of acne.

4. A brief outline of practical treatment i given.

—1216 Medical Arts Bldg.

THE LARYNX AND ITS RELATION TO BRONCHOSCOPY AND ESOPHAGOSCOPY

JAMES P. RIGG, M. D.,
Grand Island, Nebr.

The larynx is one of the anatomical structures of the body about which the average practitioner knows very little. Yet, it is one of the most important organs of the body. Perhaps the reason that few of us are familiar with the larynx is because we have never taken the time to examine it. An examination of the larynx should be a routine procedure by the throat specialist, and certainly the general practitioner should so familiarize himself with the normal and pathological larynx that he can make such an examination with ease. More pathology of the larynx would be ascertained if more larynges were observed.

The larynx is essentially a cartilaginous box, semi-triangular in shape with the apex directed anteriorly. It is the Adams apple of the neck—important externally as a landmark in the tracheotomy operation. both emergency and permanent. The cricoid, one of the cartilages of the larynx, is the lowest land mark or protusion on the anterior surface of the neck, below the thyroid cartilage and above the suprasternal notch. It is jus above the cricoid cartilage that the emergenc tracheotomy, a horizontal incision, is done.

The larynx(1) is composed of three single car tilages: (1) thyroid, (2) cricoid, (3) epiglottis and three paired cartilages, (1) arytenoids, (2 corniculate, (3) cuneiform. In endoscopy we ar concerned only with four of these cartilaginou structures: the epiglottis, the two arytenoid car tilages, and the cricoid cartilage. The epiglotti the first landmark in either direct laryngoscop or esophagoscopy, is supported by a thin leaf-lik lamina of yellow fibro-cartilage, the epiglotti cartilage, which is placed posterior to the tongu and the body of the hyoid bone, and anterior t the aperture of the larynx. When divested of th mucous membrane which covers it behind an also to some extent in front, the epiglottic car tilage has the outline of a bicycle saddle. Th broad end of the cartilage is directed upward and is free. Its margins are to a large exte inclosed within the aryepiglottic fold. The a erior surface is free only in its upper part which s covered with mucous membrane. The function f the epiglottis is not that of a trap door, as ormerly taught. but it aids in guiding the bolus f food into the pyriform sinuses. It is quesionable whether it splits each bolus of food, but t probably guides the bolus either into the right r left pyriform sinus. That it does not act as a rap door is readily demonstrated by laryngocopic examination, also in types of organic disase causing epiglottic destruction there is lack f dysphagia.

“Closure of the larynx is accomplished by the pproximation of the ventricular bands, aryenoids, and the aryepiglottic folds, the latter havng a sphincter-like action, and by the raising nd tilting of the larynx.” (2)In the normal nechanism of swallowing this is accomplished. 3)“The investigations of Anderson Stuart have hown that the superior aperture of the larynx is losed during swallowing by the close apposition nd the forward projection of the two arytenoid artilages, which are forced against the tubercle f the epiglottis. The muscles chiefly concerned n this movement are the thyreo-arytenoid musles and the transverse arytenoid muscle. These nuscles form a true sphincter vestibuli. The arypiglottic muscles also assist in the closure.”(4)

The arytenoid cartilages are placed one on each ide of the median plane and rest upon the upper order of the lamina of the cricoid cartilage. Each resents a somewhat pyramidal form, the pointed pex is directed upwards. We are particularly nterested in the arytenoids because of their moility, because the rotation of them at the crico-rytenoid articulations determines the movenents of the true vocal cords. It supports the orniculate cartilage. The observation of the rytenoids in endoscopy, their part in voice proluction, and their assistance in the mechanism of losure of the larynx make them important strucures.

The cricoid cartilage is signet-ring shaped with ts posterior part as a broad, thick plate, quadriateral in form, and anteriorly it is a curved band. he lumen of the cricoid is elliptical. It is not he cricoid cartilage that causes the constricion of the esophagus in this area in endoscopic xamination, but the crico-pharyngeal muscle vhich exerts a most powerful pull on the carilage—the pull being in the direction of the cerical spine.

The nerve supply of the larynx is derived from he superior laryngeal and recurrent branches of the vagus nerve. (4) The superior laryngeal nerve is the sensory nerve to the mucous membrane and the motor nerve to the crico-thyroid muscle. The crico-thyroid muscles render the vocal cords tense. All the other muscles receive their motor innervation from the recurrent laryngeal. The recurrent laryngeal may be damaged by mediastinal growths, mitral stenosis, bulbar palsy, and on the left by an aortic aneurysm. In palsy of this nerve the posterior crico-arytenoid is first affected and the corresponding vocal fold remains in the midline in the position of phonation. If both sides are affected, the position of the cords is a cadaveric one, midway between adduction and abduction. The voice is hoarse if one nerve is involved. but not lost, since during phonation the healthy vocal fold crosses the midline to meet its fellow. Both nerves being involved makes phonation impossible. There is no stridor except in deep inspiration. Paralysis of the superior laryngeal leads to loss of laryngeal sensation, and also causes hoarseness because of paralysis of the crico-thyroid muscle and hence deficient tension of the cords.

The false vocal cords or plica ventricularis may phonate in absence of the vocal cords. The ventricles or recesses below the ventricular bands contain mucous glands. The secretion from these glands helps in lubricating the true vocal cords. Into the ventricles foreign bodies may be aspirated, and careful examination of them in laryngoscopy is advisable. The ventricularis and recesses may be involved in lesions of tuberculosis, gumma, cancer, catarrhal ulceration, and other laryngeal diseases.

The true cords appear in indirect laryngeal examination as pearly bands, in direct examination a tinge of pink is observed. Below the glottis the tissues approach the midline from below upward forming a wedge shaped lumen called the conus elasticus. It is in this area that the tissues are very vascular and subglottic swelling following a bronchoscopic examination may ensue, especially in children. For this same reason a tracheotomy should involve the fourth or fifth tracheal cartilage. A cause for subglottic swelling also is rhino-scleroma, seen in Europe.(5)

The anesthesia used in many endoscopic examinations may be local or none at all, but ether can be used advisedly in both bronchoscopic and esophagoscopic procedures. The preoperative administration of nembutal or sodium amytal in certain selected cases is advisable. I have never used avertin but Brighton(6) advises its use. He states that especially in esophagoscopy with the involuntary spasm of the crico-pharyngeal muscle, its relaxation is markedly facilitated. Chevalier Jackson(2) states that a dyspneic patient should never be given a general anesthesia, cocaine should not be used in children under ten years of age, and total abolition of the cough-reflex should be for short periods only. Morphine is also a part of the drug armamentarium to be used as necessary.

The use of x-ray(6) and fluoroscopy(7) cannot be emphasized too greatly. X-ray should be a routine procedure in most cases in which a foreign body is not observed by direct or indirect hypopharyngeal or laryngeal observation. Non-opaque foreign bodies may not be seen themselves, but a variation in the two sides of the chest is found.

(8)Pneumography by lipiodol has been used rather successfully in the detection of certain diseases of the bronchial tree.

Great tribute should be paid to such distinguished endoscopists as Haslinger, Jackson, Tucker, Manges, Ancoin, and Waldapfel. Through their pioneering, new channels in this field have been traversed.

CASE REPORTS

Case No. 1. J. P. A little girl aged 2 years. Twelve hours ago choked while eating peanuts. An examination of the chest revealed considerable variation of the breath sounds over the right and left chest. X-ray showed considerable condensation of the left chest area. Bronchoscopic examination revealed a peanut kernel in the left bronchus which was removed. Patient had uneventful recovery.

Case No. 2. L. K., aged 15. Aspirated sandburr while husking corn. Indirect laryngoscope showed sandburr lodged in upper trachea. Removed with laryngoscope with no untoward effects.

Case No. 3. B. P., aged 18. Aspirated sandburr while riding in truck. Has considerable hoarseness, some difficulty in breathing. Unable to locate sandburr with indirect laryngoscope. X-ray negative. Bronchoscopic examination showed sandburr located at bifurcation of trachea. Removed with no subsequent condition remaining.

Case No. 4. Age 3. Had considerable difficulty during October and November, 1933. December 8, after diagnosis by local physician of some foreign body in lung, reported to the office. X-ray revealed a tack in the lower right bronchus. Patient had considerable difficulty in breathing. Temperature 101. Considerable cough and at times profuse mucus drainage. In two attempts to remove tack with bronchoscope the tack was not seen and unable to remove same. Patient had considerable sub-glottic edema. It was necessary to put in an intubation tube and watch closely for about ten days. Inasmuch as the patient had had such a terrific reaction, it was deemed advisable for a few weeks to wait before another attempt to remove the tack. In January, 1934, with the aid of the fluoroscope, although tack was not visible by bronchoscopic examination, it was possible to remove tack. Patient made an uneventful recovery and is in excellent health at the present time. The x-ray revealed both prior to and immed ately following the removal of the tack, a considerab area of infiltration around the foreign body.

Case No. 5. D. C., aged 2. Playing with corn. A parently aspirated small kernel. X-ray revealed co siderable variation in density in lung areas on rig and left side, although no foreign body was demo strable by the x-ray. Bronchoscopic examination r vealed the kernel of corn lodged in the right bronchu This was removed and patient recovered promptly.

All cases of questionable foreign body should x-rayed and a very careful physical examinati made before attempting removal.

(Bibliography in Reprints)

DISCUSSIONS

DR. J. J. HOMPES, (Lincoln): Although Dr. Ri has gone into a general discussion of esophagosco and bronchoscopy, I shall confine my remarks to t published title of his paper. It is perfectly obvio from what has already been said that peroral end scopy has become so helpful in the diagnosis a treatment of disease of the esophagus and the trach bronchial tree, as well as in the removal of forei bodies that its use has become very common. O viously, to get into either the food or the air passage the larynx must be passed and for that reason ce tain conditions of the larynx may make for weal woe in one's work. There are certain congenital d fects of the larynx, such as contractions, small laryn congenital webs and even a ptosis of the laryn that are well to keep in mind. In ptosis, for instanc the larynx may be so low in the neck that there w be no tracheal rings above the episternal notch that a tracheotomy if required, would have to done sub-sternally.

There are other factors that may be encountere such as certain neuroses leading to laryngeal spas and hysterical conditions affecting the voice bo There are the paralyses that have been spoken If one has the picture of paralysis of the recurre laryngeal nerve, one will sense that there is prese some intra thoracic lesion, tumor, anurism, etc., th would make one wary of doing a bronchoscopic e amination.

Edema, following bronchoscopy, has been spoken Edema is often present before examination.

I was called in to see a case of a child who thr days previously had choked on a peanut. The chi was in extremis, because of inability to breath. rushed the child to the hospital with the one idea mind, that of removing the foreign body as soon possible. To my surprise, I could not pass the bro choscope through the larynx due to swelling a wasted several precious minutes until I was forced an emergency tracheotomy to save the child's li The swelling proved to be an abscess of the lary and this was the important factor in the case fr the beginning, as it proved that the child did have a peanut in its lung. Such a case impress one with the importance of giving careful conside ation to possible laryngeal conditions.

DR. FREDERICK F. TEAL, (Lincoln): The remar of Dr. Hompes lead me to recall a remark of I Jackson to the effect that a bronchoscopy is not ne essarily an emergency affair. He even goes so f as to say the doctor should not be called to do bronchoscopy in the middle of the night, because needs his sleep and strength to do a successful bro choscopy. If you have a foreign body in the air pa sage, a few hours do not necessarily make very mu difference, all other things being equal.

This discussion has taken a wide latitude. I thi it would be in line to make a few remarks ab the prevention of the operation. A great many f eign bodies we get in the lungs and larynx co under the class of vegetable material, such as peanuts and popcorn. We have children as young as wo years of age—sometimes before they can chew—given peanuts and popcorn. It is a highly dangerous procedure. Any vegetable matter is exceedingly dangerous in the lung, anyhow. It is a bad practice, particularly in view of the fact most adults and children will throw their heads back and toss the food into the mouth. It is a trick that occurs in a great many rades. Take the upholsterers and carpet layers, who carry tacks and nails in their mouths. I have removed a number of tacks from the lungs, due to this practice.

DOCTOR RIGG (closing): I want to thank the gentlemen for the discussion and state that their remarks are certainly very pertinent. My plea in this paper has not been to urge emergency bronchoscopys particularly, although we know they are many times necessary, but I have attempted to lay stress on the fact that routine peroral endoscopic examinations should be done, and frequently it is by this routine procedure that more diagnostic evidences of certain diseases of the trachea, bronchi and esophagus will be ascertained.

I also urge that no child under three years of age should ever be allowed to eat peanuts or pop corn unless finely ground and mixed with other foods, which will provoke no hazard in the possible aspiration of same. Also, every open safety pin must be a condemned article at any place, any time. Thank you.

METHODS OF INFANT FEEDING AS USED IN THE NEWBORN CLINIC, UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE THE PAST THREE YEARS*

C. G. WEIGAND, M. D.,
(From the Department of Pediatrics, University of
Nebraska College of Medicine),
Omaha, Nebraska.

The problem of infant feeding perhaps presents more differences of opinion than most any other field in medical practice today. Much of the confusion which has resulted from such a diversity in methods of feeding and recommended theories, is unwarranted, for if one follows the basic fundamentals dealing with the nutritional needs of infants, very little if any difficulty should ensue. These nutritional requirements are now quite definitely established.

It is the purpose of this paper to present a resume of one of the numerous accepted theories, pertaining to artificial feeding of infants. This method has been adhered to as closely as possible in feeding 414 infants at the New-born Clinic, University of Nebraska, College of Medicine. during the past three years. 560 babies passed through the clinic for feeding observation. There were 309 girls and 251 boys. 146 were entirely breast fed up to the age of 9 months when they were weaned. 196 were entirely bottle fed, and 218 needed supplementary feeding at the average age of 4 months. The accompanying lantern slides, bearing evidence of the statistical record of results, I believe will serve to prove the efficacy of this one simple method of feeding.

A food which is expected to meet the nutritional standards of an infant, must necessarily be complete, digestible and absorbable. The selection of such a food, must be based on an understanding of the chief elements it contains, and the function and value of these elements to the growth, energy and developmental requirements of the infant. If a formula is so composed to meet these requirements and at the same time is utilized without causing harm. it should be successful. Should the formula fail in any one of the requirements it will fail as a whole.

The days of complicated formulae for babies' food are over. Well babies do not need top-milk and creams, whey, lime water and various other foods that are frequently recommended. These foods and special mixtures should be reserved for sick infants. Plain dilution of cow's milk, with all the cream stirred in, to which is added water and a carbohydrate, answers all the requirements of a good food. There does not seem to be the same tendency to constipation, when plain dilutions of whole milk are used, unless some abnormal condition exists requiring treatment other than purely feeding attention or readjustment.

In answering the requirements of the average artificially fed infant, eight details were given consideration. These are not necessarily presented in the order of their importance but for the sake of clarity and simplicity, are so given.

First: Calories. The average infant requires food supplying approximately fifty calories per day for each pound of body weight. This is dispensed for very definite and specific uses.

There are several factors influencing the caloric requirements. A small baby requires a greater caloric value per pound; a very active baby will require more; undernourishment requires that one figure the formula on the expected weight rather than on the actual weight, thus more calories are needed. Food of less caloric value is needed in warm weather than in cold.

---

*Read before the Nebraska State Medical Association May 24, 1934.

Second: Protein. If it were necessary to supply only calories, one could raise an infant on sugar but it is essential to supply other elements for growth, energy, et cetera and these elements in proper quantity will automatically answer for the number of calculated calories. Protein is the repair food and growth factor and most of it, nearly two-thirds, is retained in the infant's body when fed. Slow weight gain, lack of resistance to infection, anemia and nutritional edema are symptoms allied to difficient protein. It has been stated that one cannot give too much protein. The proper amount is supplied by the protein in cow's milk when we give an infant from one and one-half to one and three-fourths ounces of whole milk per pound per day, supplying one gram of protein in each ounce.

Third: Fat. Fat, in addition to producing energy, is also necessary for the proper formation of the infant's stools. The fat requirements are also supplied, that is, one and one-half to one and three-fourths grams per pound when we give one and one-half to one and three-fourths ounces of whole milk per day for each pound of body weight. Too much fat may produce either constipation or diarrhoea.

Fourth: Carbohydrate, which supplies energy and is a factor in the utilization of other foods, mainly fats. The lack of proper quantities of carbohydrate may result in slow growth, evidenced by failure to gain, apathy and failure to properly utilize other foods. There is quite a wide variety of sugars to choose from, namely milk sugar or lactose, granulated sugar (sucrose) or the malt types, such as dextri-maltose, Karo or Amaizo syrup. The proper quantities of carbohydrate may be easily calculated in one of three simple ways. For example take a ten pound baby. For protein and fat, a minimum of fifteen ounces of milk, supplying three hundred calories of the necessary five hundred needed, should be given. The two hundred remaining calories are calculated by dividing this figure, two hundred, by the caloric value of the chosen carbohydrate, represented in ounces. If we use Karo or Amaizo syrup as was done in the clinic, its value being one hundred and twenty calories per ounce, then about one and one-half ounces will be needed. A second method is to follow the rule of allowance, namely one ounce of carbohydrate to each ten ounces of milk, thus one and one-half ounces. A third method and perhaps one of the most simple is to take 5% of the total amount of the formula the baby is t receive in twenty-four hours. Milk fiftee ounces, water fifteen ounces, a total of thirt ounces times five per cent, equals again one an one-half ounces of carbohydrate. They all com out approximately alike.

Fifth: Water. The fluid requirements of th average infant are enormous. If the averag adult were to drink as much water per pound o body weight as does the infant, he would drin over thirteen quarts a day. The water or flui requirements of the infant are supplied when h receives three ounces per pound per day, tha is, our ten pound infant should receive thirt ounces of fluids (milk and water) a day. Fifteen of this has been supplied in milk whic leaves fifteen ounces to be added in boiled water.

Sixth: Mineral elements. The mineral requirements, with the exception of iron, are supplied when one and one-half ounces of milk pe pound per day are given. However, when th infant is born there is usually a sufficient supply of iron stored in its body to cover its requirements for the first six to nine months of life Should iron be needed, it may be added to th formula in the form of raw egg yolk. If th baby gains twenty-five grams a day, one gra is mineral. If this one gram is not supplied o retained, the remainder, that is water, fat, an protein gain, cannot be retained by the baby.

Seventh: Vitamines. There are two vitamine which should be added to every infant's diet One is the antirachitic (vitamine D) which i present in cod liver oil, viosterol, or halibut live oil, the lack of which may result in rickets. Th other is the antiscorbutic (vitamine C) whic is present in orange juice or tomato juice, th lack of which may result in the development o scurvy. Both of these should be started in adequate dosage by one month of age. If a twi or premature infant is being fed, the cod live oil should be started still earlier. Vitamine is also supplied automatically in the cod liver oil

Eighth: Digestibility. If the above requirements have been answered, and the mother ha been taught to observe ordinary, common sens precautions as to cleanliness and sterility in th preparation of the formula, it should be entirel adequate and digestible. The infant should b satisfied and thrive. Necessary changes wi have to be made periodically as the baby gains.

Each infant presented for feeding purposes i an individual unto itself and no one method o rule will suffice to meet the requirements of every infant.

The foregoing is one method of feeding which has worked out satisfactorily in a group of four hundred and fourteen babies. There are none included in this number whose feeding routine has necessarily been a variant from the above to any marked degree. There are none included who have been hospitalized, attended other clinics for feeding purposes, or attended this clinic irregularly. Consequently follow-ups have been as accurate as it has been possible to get them.

There is no one type of food or method of feeding that is to be recommended to the exclusion of all others. When the requirements of the individual case can be met by simple means, it seems advisable to use them, thus avoiding complicated formulae and more costly manufactured preparations.

DISCUSSION

DR. FLOYD S. CLARKE, (Omaha): Mr. Chairman and Gentlemen: It seems to me that the practical thing to think of in feeding youngsters is whether or not they gain. That is an every day thought, as Dr. Weigand has exemplified in his talk. Did he gain, and does he gain on the food which you are giving him at the time? If he does and is comfortable, that seems to be the principal thing, irrespective of what type of food you may give him.

Dr. Weigand has spoken to you regarding the different methods of feeding or different kinds of food which he has given in different ways. There is no real method. It seems to me from a practical standpoint that it is necessary to have in mind a so-called feeding "hunch" which we can all obtain if we develop it. There is not at the present time very much difference of opinion regarding the feeding of infants insofar as pediatricians are concerned. I think it is well recognized we have adopted a practical way of feeding children without too much attention to unnecessary detail which we formerly did not have. We are not feeding percentage feedings or using top milk, etc., as so many of us were educated to use. The modern way is the simple way, using a simple milk-and-water formula which Dr. Weigand has shown you.

As to the proprietary foods, it seems to me and to many of us, they have a limited field of usefulness. I do not think it is a good plan to have a detail man come into your office and leave you certain samples, and tell you to put so many scoopfuls of this in and mix it with water, and add sugar, and feed it to the youngsters. I think we should be able to write out a simple milk-and-water formula such as pediatricians are doing at present. The principal criterion is, "Is the baby comfortable? Is he gaining?"

Dr. Weigand has spoken to you regarding calories. We should feed, as he has told you, fifty calories or more per pound of body weight. But a baby knows very little about calories, and you can exceed that or diminish it as you see fit. After all, it narrows itself to an every-day workable practical procedure which we can all follow out in our office, if we will avail ourselves of a few simple rules, and buy a pair of scales.

PSEUDOPARALYSIS OF CHILDHOOD*

JOHN V. REILLY, M. D.,
Grand Island, Nebraska.

It is a well known fact that pediatricians, generally, when encountering a paralysis in an infant or child feel that they are incompetent to handle the situation except as a temporary expedient and infer that the case must have distinct neurological treatment. Justification for this paper is attributed to the fact that at numerous times during my medical career I have experienced the same thought that seemingly, here was a paralysis of serious import that should be dealt with by a neurologist, but later, after a more contemplative analysis of the etiological irritating factors and simple therapeusis relegated itself to a transient or false paralysis, rather than a true or permanent condition with extensive tissue destruction.

What we forget is, that unlike the adult, in children we are dealing with a nervous mechanism, unstable, functionally inadequate to perform duties of a solid organism, admitting of variability in its symptom complex. and what at times purports to be a permanent disfunction, is only a temporary deficiency due to a slight anatomical, pathological, or physiological affection. In a study of paralysis in children, we must not only take into consideration the paralyzed member, and its nerve tracts through cord and brain, but must make a complete general examination, omitting nothing (obtain as reliable a family history as possible) and obtain detailed information regarding the past and present history of the case.

In our etiology we must not take too much for granted, for we will find the cause, many times, does not always produce the same set of symptoms, but will depend upon the site of the lesion, the age of the child, the form of paralysis, and the general condition of the patient. We must realize that heredity plays a part in some forms of paralysis and auto intoxication has produced some confusing symptoms. Also seconday inflammations from whooping cough, scarlet fever, diphtheria, pleuritis and pneumonia with paralytic sequallae have been encountered. Deficiency diseases as scurvy, rickets, syphilis, and tuberculosis leave their traces. Bone injury and tumors affect muscular activity. Hysteria and pseudotetany cannot be eliminated as possible irritating factors. Alcohol, lead or arsenical poisoning must not be overlooked, and also the hemorrhagic diathesis. And we must also bear in mind reflex septic invasion from infected tonsils, teeth, ears and sinuses.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, May 24, 1934.

In other words, do not overlook any etiological contingency, as neurologists have many times pointed out that in children. it often is quite difficult to find the cause.

Having analyzed all the possible etiological factors, we now come to the most confusing portion of our examination: The diagnosis. We must first know whether it is an acute or chronic condition, and whether we might consider the paralysis as congenital or acquired, and this we will find at times somewhat perplexing, for the reason that a child may develop a paralysis shortly after birth from injury or disease that in no sense could be classed as a congenital condition, but an acquired one. Our birth paralysis, other than peripheral affections are not always an obstetrical paralysis due to faulty technique, deformity of pelvic anatomy or prolonged labor, but possibly may be due to brain or cord tumor, hemorrhage from mineral deficiency, injury shortly after birth, or prenatal factors.

And so with other paralytic conditions, we must consider the possibilities of them being of atypical form. We must differentiate between a cortical lesion with its spasticity and a cord lesion with its flaccidity. We must observe whether there is an apparent complete paralysis with inhibitions of motor and sensory activity or an incomplete with slight or recurrent inhibition.

We must not bear too much stress on our negative or positive qualities of our Babinski or other reflexes, for it has been shown conclusively that they cannot always be properly evaluated. We must resort to lumbar puncture to note whether we are dealing with a hemorrhagic, infectious, or inflammatory condition. We must x-ray completely as possible to note any disturbance from fluid. bone or tumor pressure, and we must resort to the ophthalmoscope to observe any reflex, retinal irritation from intracranial pressure, and we must have a Wassermann. But we will find quite often, our routine examination will avail us nothing if we fail to remember the atypical nature of childhood. A spastic paralysis may be due to petechial hemorrhages without tissue destruction from any one of the congestive diseases. A flaccid paralysis may not be due to a destructive lesion of the diameter of the cord, but only a few fibres, and a positive Wassermann is not always reliable evidence of syphilis, unless we get a positive family history. We must question closely in a paralysis of recent origin, even if there is an epidemic of infantile paralysis in our neighborhood, as the possibility of lead poisoning from the baby or child playing with lead toys or utensils that they can put in their mouths.

We must also ascertain the possibility of alcoholic poisoning, since alcohol has come on the market generally, and some parents, especially of certain nationalities, are prone to let the whole family imbibe ad libitum. We must also remember that arsenic is still given in large doses by some physicians for the treatment of chorea, and that we may have an arsenical paralysis. We must bear in mind an infection or inflammation in any portion of a child's anatomy can be transmitted through its delicate structure to the brain or cord, and produce a transient paralysis. From our knowledge of the mechanical cause of muscular activity as being due to the reflex stimulation from the cortex through the cord, and its fibrillary extension to the muscles of the body, we must, in making a diagnosis, take into consideration all the possibilities that may reflexly produce disease of that tract, not forgetting that the lesion may be in a few fibres, rather than having a diffused aspect.

In diagnosing. our safeguard lies in the general statement that parlysis is reflexly due to congestion, and whether this congestion is due to infection, inflammation or oedema does not alter the symptoms, but does alter the stability of the symptom.

During the infantile paralysis epidemic in New York in 1916, there were a number of cases diagnosed as such, but which proved embarrassing to the attending physicians, when found to be peripheral affections, due to aural disease or cold.

Recently I saw a case of spastic paralysis due to septic tonsils with complete recovery after tonsillectomy. Another with undoubted encephalitis, which cleared up after mastoidectomy and lumbar puncture; another with spasticity following pertussis clear up under calcium therapy; another with flaccid paralysis which undoubtedly was an atypical case of scurvy clear up under vitamine treatment. Another, a girl eight years old with seeming paraphlegia who recovered under treatment for hysteria.

It is this sense of insecurity of diagnosis that should make us feel that our conclusions as to the transient or permanent nature of the paralysis hould be guarded, for on many occasions we have seen cases recover where we had made adverse diagnoses. As regarding treatment, if we are to maintain our standing as students of childhood, we must keep in mind that their tissues urvive tissue injury, and recover more rapidly han adults, and this applies just as aptly to paralytic conditions.

We must not fall into the frequent error of oncluding that a paralysis means a complete detruction of the affected portion, with its permanent status, but remember its transient possibilities. Our chief reliance in treatment is to remove all possible focal infections or pressures, build up the child's resistance by hygienic and dietic treatment, and as I have done, and feel hat it is one of the fundamental principles of the reatment of these cases to build up their calcium equilibrium. for we all know that calcium deficiency will produce not only a susceptibility to an exudative diathesis, but also a weakness of muscle tissue due to decreased inherent contractibility factors.

I have given large and continued doses of calcium in paralytic muscular conditions, and am of the decided opinion that it has proved very beneficial.

CONCLUSIONS

First: The salient points I have tried to bring out in this paper are that through early diagnosis and treatment, some of the paralysis of childhood may limit themselves to a transient disorder.

Second: Calcium therapy has a decided beneficial effect in treatment of paralytic conditions.

DISCUSSION

DR. HERMAN M. JAHR, (Omaha): One must distinguish between pseudoparalysis and a transient paralysis, the first being not a paralysis, but usually traced to some anomaly in the nervous make-up of the child. A transient paralysis is usually due to a nervous disturbance based on an organic or toxic condition. One must differentiate between cerebral paralysis and toxic encephalitis, infantile paralysis, and a number of other conditions which may cause the child to have paralytic symptoms.

I should like to call your attention to pseudoparalysis based on a purely behavior complex. These children can demonstrate and execute the most puzzling symptoms leading to nothing but confusion with regard to portrayal of the syndrome. Pseudoparalysis caused by this anomalous behavior frequently is a very serious affair, because of the prolonged time which it sometimes may last. The beautiful part about it is as soon as the child discovers that we are aware of the etiology of this lack of motion, the paralysis promptly disappears.

It is very important to establish a diagnosis, and particularly the toxic cause or the hysterical cause. The toxic cause may be treated on the basis of the pathology involved. Sometimes the transient type clears up immediately. Sometimes it may last days or weeks. The hysterical paralysis may last for months, and will last just as long as the child feels that somebody is concerned about him, and particularly concerned about his lack of motion of whatever part of the body may be involved in this dysfunction.

DR. REILLY, (closing): The most important point is making the diagnosis. We find many cases coming into the office with a suspicion of a permanent paralyzed condition. If we make a complete analysis, we will find lots of times it is a transient condition. Also, as I stated, I have found where generous doses of calcium have produced beneficial effect in the treatment of paralysis, through stimulation of a lowered muscular resistance.

REPORT OF CASES OF POISONING DUE TO SHOE DYE*

R. E. HARRY, M. D.,
York, Nebraska.

During three months of the year 1933, namely May, June and July, my attention was called to four cases of poisoning, as a result of contact with shoe-dye. Neither before nor since, have I had occasion to see any cases that fit this category.

It is my purpose in this paper to present a brief review of the available literature on this subject and to give the general train of symptoms and signs which usually accompany these cases.

Muehlberger(1) in 1925 reported an exhaustive review of the literature, and reported ten cases of his own, bringing the total then reported to 58 cases. In his report, he quoted all the data and entered into an analysis of the cases. Up to the time of his report, all the cases had been due to nitrobenzene. In his series of ten cases six were due to Analine poisoning.

Patek(1) in 1926 reported 3 cases, all of which were due to Analine dye.

Cases have been reported by Forsberg(3), Aikman(4), Albert(5), Ullman(6), Kling(7), Ramond(8), Rodda(9) and many others.

From these articles, the following symptoms may be summarized as characteristic of the poisons from the solvents used in shoe dyes.

Headache, dizziness, restlessness, backache, paralysis, convulsions, ringing in the ears, vomiting, dyspnea, weakness, nausea, methemoglobinemia. A constant never failing sign is the very intense cyanosis, or bluish black discoloration of the skin, mucous membranes and nails.

---

*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, May 24, 1934.

All authors seem to agree on one phase of this subject and that is that the poisoning is caused by absorption through the skin of a solvent used in the dye, and that while there is no specific treatment for the disease, washing the skin and particularly that of the feet, thoroughly with soap and water, seem to give good results. The giving of salines laxatives was also recommended.

I wish to report the following four cases, seen or contacted during 1933:

Case 1. G. V. Boy, aged 4. Past history negative except for occasional attack of sore throat, and history of rheumatic pains about 3 mouths prior to this attack.

Had gone fishing in the morning and was brought in in the afternoon because he was blue and complained of dizziness.

On examination the temperature was normal, pulse was fast and thready, he seemed nervous and there was a marked cyanosis of the mucous membrane and nails and a greyish discoloration of the skin. Cardiac stimulants, a warm bath and rest in bed were ordered. Recovery was uneventful, and all signs were absent after five days.

Later history developed the fact that he had worn a pair of open work oxfords which, on the previous day his father had dyed black.

Case 2. J. C. Boy, aged 10. Previous history negative.

Went to picture show in afternoon and came home feeling well but looking very blue.

On examination nothing was found except marked cyanosis, which lasted for three days.

Bath and rest in bed ordered. Recovery was uneventful.

Had worn a pair of shoes dyed black 24 hours previous to attack.

Case 3. J. G. Boy, aged 13. History and physical findings were much the same as in preceding case, except that he fainted and was very dizzy.

Treatment—Bath and bed rest.

Uneventful recovery, complete in five days.

Had worn shoes dyed black on previous day.

Case 4. Reported by a colleague.

R. B. Girl, aged 10. Essentially same history as previous two cases, except that her pulse was rapid and temperature reached 100 F.

Treatment was bed rest. Signs of poisoning persisted for three days. Recovery was uneventful.

She had worn a pair of shoes dyed black on previous day.

These cases were apparently all of a mild nature, but serve to illustrate the point that in all cases of intense cyanosis, shoe-dye poisoning should not be overlooked.

BIBLIOGRAPHY

1. Muehlberger, C. W.: Shoe Dye Poisoning. J. A. M. A., 84:1987, June 27, 1925.

2. Patek, A. J.: Analine Shoe Dye Poisoning. J. A. M. A., 86:994 and 945, March 27, 1926.

3. Forsberg, C. Wm.: Shoe Dye Poisoning. Journal-Lancet 50:112-113, March 1, 1930.

4. Aikman, John: Shoe Dye Poisoning. Am. J. Dis Children, 35:1038-1040, June, 1928.

5. Albert, Henry: Five Recent Cases of Shoe Dye Poisoning. J. Iowa Med. Soc., 17:225-227, July, 1927.

6. Ullman, Hares: Analine and Nitrobenzol Poisoning by Shoe Blackenings. Deutsche, Med Wchnschr. 52:998-1001, June 11, 1926.

7. Kling, A.: Accidents Caused by Vegetable Dyes Used for Shoes, Drygoods, Furs and in the Preparation of Cosmetics. Bull. Acad. de Med. Paris, 103-690-695, 1930.

8. Radmond, Louis: Dermatitis Provoked by Analine Shoe Dyes. Presse Med. 39:763-764, 1931.

9. Rodda, F. C.: Nitrobenzol Poisoning in Children Report of Three Cases Caused by Shoe Dye. Minnesota Med. 6:544, 1923.

DISCUSSION

DR. HOWARD B. HAMILTON, (Omaha): There are certain things which if you once see, you never forget. If you once see one or two patients with a peanut down the lung, you are ready to recommend all children are not given peanuts to eat. The removal is a serious thing. Likewise. the appearance of a child in cyanosia or shoe dye poisoning is a thing you do not forget. Scarcely anything I have ever seen can give a bluer child than the absorption from shoe dye, unless it is the cyanosis of a bad congenital heart, or where dissolution was impending.

Apparently these four cases came from the same community, and possibly the same source of dye was sold. It would be worth while to investigate the type used, and if used by a shoemaker, he should be warned to see to it the child does not wear the shoes until sufficient time has elapsed for the dye to become thoroughly dry.

DR. O. J. CAMERON, (Omaha): These cases of poisoning which are due to some substance combining with hemoglobin and interfering with oxygen combining with the hemoglobin, resulting in a degree of true or relative anoxemia, are interesting.

At one time I saw several of these cases in college students. They all presented intense cyanosis on their faces, and gave the history of having had their shoes dyed recently. I wish to emphasize the point of this intense cyanosis. One should keep it in mind. It is quite characteristic.

There are other things besides shoe dyes (nitrobenzene) which will produce this methemoglobinemia. Potassium chlorate, acetanilide, sulfonal or trional poisoning may do it. There is a simple test for methemoglobin which can be performed at the bedside. Prick the finger and examine the color of the blood on white paper. The color is chocolate brown. The color of the skin produced by other things which make more or less of a fixed chemical combination with the hemoglobin, interfering with oxygenation of the blood is also sometimes characteristic. You are familiar with the cherry red color of the skin and lips associated with carbon monoxide gas poisoning. You are familiar with the brownish green discoloration of the skin produced by sulphur dioxide or perhaps other gases which have a high sulphur content and result in sulphemoglobinemia.

I think this has been an interesting presentation.

"What has become of the old fashioned physician who carried pills and plasters about in a leather bag which smelled strongly of the stable?"

A CASE OF ANTHRAX SEPTICEMIA, WITH TREATMENT BY MASSIVE DOSES OF ANTI-ANTHRAX SERUM*

GUSTAV N. NILSSON, M. D., B. Sc.,
Bloomfield, Nebraska.

On August 17th, last year, a farmer 45 years of age, came into my office accompanied by his son, aged 17. He said he thought he was developing a boil on his arm, and the son, one on his leg. On the previous day he had noticed a small pimple on the right forearm which had overnight rapidly developed into an open ulcer accompanied by considerable swelling. There had been considerable itching over the area, immediately prior to the appearance of the pimple, but at no time had it caused him any pain, except on deep pressure over the surrounding area.

Examination revealed an indurated, punched out ulcer on the right forearm about 3 cms. in diameter, with elevated margins. The base was dark red and was covered with a dark brown serous fluid. The area immediately surrounding the necrotic eschar was studded with small vesicles. The skin for some distance around the lesion was edematous, and the axillary glands were markedly enlarged. The temperature was 101.8 degrees, the pulse 118.

The boy's lesion was on the lower right leg about half way between the ankle and the knee. It did not appear as far advanced as that of his father. There was less induration and redness, but the glandular involvement was most marked. One of the inguinal glands was the size of a small hen's egg, and it was of this that he chiefly complained.

In questioning the pair I elicited the information that 4 days previously they had skinned a cow that had died from some unknown cause. The carcass had been thrown in the hog yard, and the hide sold to a local buyer.

A smear was made from the hemorrhagic fluid, as well as from the contents of the vesicles on both patients, and bacillus anthracis was found on all slides. They were put to bed immediately, with elevation of the affected limbs and boric acid dressings covering the lesions. I was able to obtain one vial of 100 cc anti-anthrax serum from one of the local veterinarians immediately, and although this serum was primarily intended for animals, the boy was given the entire contents of the vial, half intramuscularly, half in about six injections surrounding the lesion.

A call was put in at once for all available serum at Norfolk, and Sioux City. This gave us only 400 cc which was immediately administered to the older individual. This serum arrived about midnight. In the meantime, the temperature had risen to 105.2 degrees, the pulse weak and thready, he complained of substernal pain, at times quite severe, and he finally went into a state of coma. The blood count showed 26,800 white cells, with 94% polymorphonuclear leucocytes. A blood culture was made and submitted by special messenger to an Omaha laboratory for immediate examination. The results arrived several days later and showed a positive culture for bacillus anthracis. In the meantime, on strong suspicion of an anthrax septicemia, I endeavored to administer 300 cc of serum intravenously, and 200 cc intramuscularly into the deltoid and locally around the lesion every 3 hours. Our greatest difficulty was in obtaining serum. We had exhausted all available sources of supply in Sioux City, Omaha, Lincoln, Kansas City and Minneapolis. Our final resort was a veterinary serum company in Kansas City that shipped 10,000 cc by special plane.

On the second day the minimum temperature was 03.6 degrees and the maximum 105.6 degrees. He was cynotic at times and irrational at all times. The pain in his chest seemed to give him a great deal of distress. It was extremely difficult to enter his veins, due both to circulatory collapse and marked edema and ecchymosis at previous sites of injection. The final injections during this circulatory collapse were made in the jugular veins.

During 24 hours the lesion on the forearm had spread to such extent that it now occupied the entire area across the flexor surface of the forearm. Enormous bullae 4-5 cms. in diameter surrounded the central lesion. They contained a dark brown serous fluid. One of these bullae developed into another lesion similar to the original.

It may be of interest to note that on the second and third day there was marked nystagmus to the right when the light was held to the right, and likewise to the left with the light on the left. The abdominal reflexes were negative, as well as cremasteric, but the Babinski was positive.

On the third day the temperature fell to 99.4 degrees at 9 p. m., but came back to 104.2 degrees the following morning, accompanied by all symptoms of circulatory collapse, and loss of consciousness. During the middle of the day the patient had a series of tonic convulsions, with cessation of respiration, requiring artificial respiration, and oxygen administration together with cardiac and respiratory stimulants, administered both subcutaneously and intravenously. The pulse remained irregular and weak for another 24 hours, the cyanosis was quite marked at times, but he had no further convulsions. The temperature remained around 104 degrees. At 9 p. m. on the fifth day his pulse was of much better quality, although the rate was 134. He did not complain so much of his chest, and the white count was 16,200 with 90% polymorphonuclears. On the sixth day the temperature fell to 97.2 degrees at 3 p. m. At this time the intravenous dosages of serum were reduced to 100 cc every 3 hours, plus 100 cc intramuscularly and around the lesion. This was further reduced the following morning, with a temperature rise during the night to 102.6 degrees, to the same dosage every 6 hours. The serum was thus gradually reduced, until at last he was only receiving the serum locally around the lesion. Following most of the intravenous administrations he broke out in profuse perspiration, more so toward the end of the sickness than at first. He received a total amount of 13,400 cc of anti-anthrax serum, of which 7,600 cc was given intravenously.

The arm at this time was quite edematous and the large central ulceration very deep. The muscle and tendon sheaths were visible when the base was cleaned off, and he experienced some difficulty in flexion of the fingers for 4 months. After a secondary infection had been cleared up, and healthy granulation tissue covered the floor of the ulcer, a Thiersch graft was done, but it was only partially successful.

With the aid of the Mercury Quartz lamp, passive and active motion, and later massage, the ulcers healed in about 6 weeks, leaving a thick scar adherent to the flexor tendons.

At the present time there is no limitation of movement, and except for a slight weakness, there is no indication of permanent damage.

The boy made a rather uneventful recovery in about 8 days. His blood culture returned negative. The temperature did not go above 103.2 degrees, but the white count showed 32,200, with 94% polymorphs. He

---

*Presented before the Elkhorn Valley Medical Society, Norfolk, Nebraska, August 24, 1934.

LIBRARY OF THE
COLLEGE OF PHYSICIANS

was given anti-anthrax serum in doses of 200 cc divided between intramuscular injections into the gluteus muscle, and in about 6 local injections around the lesion. The needle was inserted rather deeply into and about the base, and the injections given every 6 hours for the first 3 days. This was then gradually decreased until he was getting no more serum on the 7th day.

The local lesion in his case did not enlarge a great deal. On the 7th day it measured about 3 cms. in diameter, and it was completely healed in about 3 weeks.

My reason for reporting these cases is, chiefly, to point out the drastic doses of serum employed, especially in the septicemia case. Dosages, approximating those employed are advocated by Drs. Eichhorn, Regan and Regan and others. As far as we could ascertain, there seemed to be no difference in the therapeutic value of the serums. The serum manufactured for human use has a list price of $10.00 per 100 cc, whereas the animal variety costs less than $3.60 for the same amount. Moreover, the veterinary serum can be obtained in sufficient quantities to enable one to carry on a drastic administration in a case of anthrax septicemia, whereas the small amount of human serum obtained in this case had to be secured from six different branch depots, some shipments in quantities insufficient for a single intravenous injection.

Without doubt, the serum therapy is at the present time the treatment of choice, both as far as non-septicemic or external anthrax and anthrax septicemia are concerned. Formerly excision was regarded as the treatment par excellence until incontrovertible evidence began to accumulate to indicate that in some instances it served perhaps no purpose other than the dissemination and generalization of the disease. Incision and thermo or chemical cauterization, likewise, produces the same effect by breaking down the surrounding protective zone and permitting the entrance of infectious material into the general circulation, by the division of blood vessels and lymph channels. In fact the radical excision of a malignant pustule is not unlike the enucleation of the tonsils for the purpose of arresting a severe follicular tonsilitis or for the relief of a diphtheritic infection.

MASSIVE STRANGULATION OF THE INTESTINE DUE TO A NON-ADHERENT MECKEL'S DIVERTICULUM*

C. H. WATERS, B. Sc., M. D., F. A. C. S.,
Omaha, Nebraska.

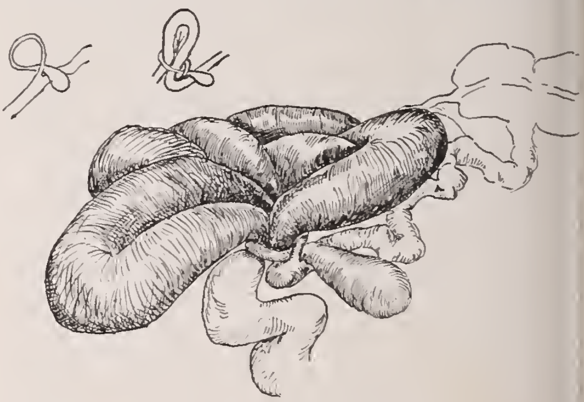
Mr. G. K., a seventy-year-old farmer, while chopping wood on the morning of August 8, 1932, began to have abdominal pains for which, because of the persisting severity, he was seen by his physician in the mid-afternoon.

In the meantime vomiting had occurred and an enema given which caused marked aggravation of the pain and was without results. Inasmuch as his pain and general physical condition was rapidly becoming alarming he was brought to the hospital, arriving approximately ten hours after the onset of his trouble.

On admission, complaining of intense spasmodic abdominal pain, the man looked desperately ill and in evident shock with a pulse rate of 120, temperature 99°, and leucocyte count of 21,000 of which 95% were polymorphonuclears. The abdomen, moderately distended, showed a large mid-line incisional hernia resulting from a supra-pubic prostatectomy performed three years previously. Palpation showed moderate rigidity, generalized tenderness, and two movable cylindrical masses passing transversely could be felt through the hernial defect in the wall.

Our first thought, in considering the cause of the obvious obstruction, was that the bowels had become incarcerated in the hernial sac with reduction en masse and persistence of the obstruction. The apparent desperate general condition of the patient together with the rapid pulse and the high white count suggested strangulation and operation was deemed imperative.

During the administration of 5% glucose intravenously and the use of spinal anaesthesia, the abdomen was opened. A considerable amount of fluid blood in the peritoneal cavity was immediately evident and accounted for by a mass of strangulated, much distended small intestine, dull black in color, with the characteristic musty odor of imminent gangrene. After some difficulty, due to the extensive mass of distended bowel, an explanation of the strangulation was found in a noose formed by a Meckel's diverticulum of unusual length and shape. The tip of the diverticulum was very dark, evidently approaching strangulation and formed an oval mass nearly egg size. The diverticulum in its entirety was subsequently found to be just short of eight inches in length. A diabolical and effective noose was formed by the locking of the enlarged tip in the angle be



Sketch showing probable development of the noose and the condition of the intestine found at operation.

---

*From the Department of Surgery, University of Nebraska College of Medicine.

ween the bowel and the base of the diverticulum, and through the noose sufficient intestine and its mesentery had wormed its way to make it taut enough o produce complete strangulation.

The diverticulum was divided at its base and four feet of ileum resected. Rather strangely the bowel above the obstruction showed very slight distention. An end to end anastomosis was made, and our patient left the operating room in fairly satisfactory condition.

During the following twenty-four hours vomiting did not recur but the pulse remained rapid and feeble. Glucose and saline solutions were administered intravenously and by hypodemoclysis, together with indicated stimulants. There was an almost complete urinary suppression with only one-half ounce of urine obtained in twenty-four hours and marked hypostatic congestion of the lungs developed with death ensuing twenty-six hours after operation.

COMMENT

Strangulation and obstruction due to an adherent Meckel's diverticulum is not particularly unusual. The case reported is unique in that with a non-adherent diverticulum a freakish combination of mechanics and circumstance did cause such a catastrophe. The unusual length and its peculiar bulbous tip were the only features making the noose formation possible.

It is astounding that in a life time of seventy years there was, apparently, no history or evidence at operation of previous inflammation or mechanical disturbance arising in or caused by the diverticulum of such extraordinary length.

TUBERCULAR APPENDICITIS

MAX EMMERT, M. D.,
Omaha, Nebraska.

W. T., a farmer, aged 22, was seen in consultation January 15, 1918, complaining of pain on the right side of the stomach.

F. H. Father had died from tuberculosis and one brother is in California with pulmonary tuberculosis.

P. H. Patient has had no serious illness but has always been a light-weight. Was rejected for the army because of being 50 pounds under weight. Height 5 feet 11¾ inches, weight 126 pounds. Always gains weight in the winter and loses during the summer months. Has not gained as much as usual during the present winter. Has had a slight morning cough raising yellow sputa but no blood during the past year.

P. I. About ten months ago, while in the West, had an acute attack of abdominal pain associated with chills, fever, nausea and vomiting. Was diagnosed appendicitis. Was in bed 2 days. Upon his return home last spring, an x-ray of the lungs was made with the result of a diagnosis of pulmonary tuberculosis. Has had very little trouble from abdominal pain until two months ago, since which time has had an occasional sharp pain in the region of the appendix. This pain is transitory. Last November had a slight diarrhea lasting two days. No blood noted. Has noticed that cough is worse when abdominal pain is present. Bowels move regularly and do not require cathartics. Patient was married three weeks ago.

Examination. Temperature last night was 100.2. Rather frail looking man with fair color. Heart sounds soft but not rapid. Lungs—impaired breathing in right apex. Abdomen—Rovsing sign absent. Some tenderness and spasm over appendix but not marked. Pain extends toward crest of ilium and behind cecum. Urine negative.

Operation. Ether anaesthesia. Right rectus incision. Omentum not adherent. Appendix retrocecal and congested. Slight induration at base of appendix. Marked induration about ilio-cecal valve and area of induration on terminal ilium. Surface roughened and whitish gray in color, surrounding which were numerous elevated, hard, white pin-head sized nodules (tubercles). From this area a line of these tubercles extend about two inches toward the ilio-cecal valve. About four inches above the ilio-cecal valve on the ilium is another area about one inch in diameter similar to the one described above. There is no evidence of involvement of the cecum or parietal peritoneum. Appendix—congested, middle third bulging and grayish-white in color. A number of small tubercles over this bulging portion. On opening the appendix it was found to be filled with white pus which was odorless. The mucosa was denuded in a number of places and the remaining mucosa was of a dead white color and undermined by the infection. There was no thickening of the walls. Patient recovered promptly from the operation without any scar infection and died from pulmonary tuberculosis the following September.

COMMENT

A tubercular appendix is usually a secondary involvement and frequently associated with tuberculous peritonitis, which occurs from three definite sources, namely—ulceration of the bowel, an involved mesenteric gland and tuberculous Fallopian tubes. In this case, the primary involvement was probably pulmonary with secondary involvement of the ilium (Peyer's patches) and tertiary involvement of the appendix. From the gross pathological condition of the appendix, it would have ruptured in a short time producing a generalized tuberculous peritonitis.

He had just hung up his shingle. That morning a stranger entered. The doctor asked to be excused as he hurried to the 'phone.

Taking down the receiver he said: "Yes, this is Dr. Whoosit. Yes, I will be ready for you at two-ten this afternoon. But please be prompt for I am very busy. Two hundred dollars? Yes, that was the estimate I gave you."

Hanging up the receiver, he turned to the stranger, and rubbing his hands, asked: "Now, sir, what can I do for you?"

"Nothing," replied the stranger, quietly. "I only came in to connect the telephone."—Thomas Topics.

The Nebraska State Medical Journal

Published Monthly by The Nebraska State Medical Association
Center McKinley Building, Lincoln, Nebraska

F. A. Long, M. D., Editor............Madison, Nebr.
R. B. Adams, M. D., Business Manager,
Center McKinley Building, Lincoln, Nebr., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION
F. A. Long, Chairman............Madison
A. F. Tyler............Omaha
B. F. Bailey............Lincoln
R. B. Adams, Ex Officio............Lincoln

Subscription $2.50 Per Year. Single Copies 35c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Reprints should be ordered from the printer. The Huse Publishing Co., Norfolk, Nebraska.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. 19 December No. 12

I HAVE always thought of Christmas time as a good time; a kind, forgiving, charitable, pleasant time: the only time I know of in the long calendar of the year, when men and women seem by one consent to open their shut-up hearts freely, and to think of people below them as if they really were fellow passengers to the grave, and not another race of creatures bound on other journeys."

—From "A Christmas Carol"
by CHARLES DICKENS

POSTGRADUATE COURSES AT HOME

In Nebraska we have developed, perhaps more than in any other state, the councilor district medical society meetings, annually or semi-annually, to supplement the county society meetings. These meetings are well attended and are a great success scientifically and socially. The programs are usually put on by men of authority. often from the metropolitan centers of the state or from medical centers out of the state. They are veritable postgraduate courses, and are of great value to the profession.

Within recent years our delegate to the Council on Medical Education of the American Medical Association has advocated in his reports, the idea of postgraduate courses in different parts of the state to be given by physician-teachers of undoubted worth. The matter has never developed beyond the embryonic stage for several reasons, not necessary to relate.

It is interesting in this connection, however, to state what is being done in Iowa, in the way of special postgraduate instructions:

> Nearly one sixth of the membership of the Iowa State Medical Society is enrolled for the fall series of courses promoted by the speakers' bureau, the Iowa State Medical Journal reports. The medical course is being given in Dubuque, Davenport and Fort Madison, while the one on surgery is in Humboldt, Ames and Ottumwa. Both courses are running for ten weeks. In addition, fifty-two physicians in the northeastern section of the state are taking the short graduate course on anatomy, planned by a specially appointed committee of the First District Medical Society. Dr. Ewen M. MacEwen, professor of anatomy, State University of Iowa College of Medicine, is lecturing in this series, which opened in September and will continue on the second Thursday of each month until April. The lectures are given in the Miller Hotel in New Hampton.

Within the past two years the Omaha-Midwest Clinics has been developed in Omaha and the five day meeting held in Omaha a month ago registered an attendance above 750 which bespeaks the interest of the profession in postgraduate study presented at opportune times and at places within easy reach. Over 400 of those in attendance were Nebraska physicians, perhaps 150 were senior medical students from the Omaha medical colleges and about 200 were physicians from adjoining states.

Comment of those in attendance reflected a feeling that the work was on the practical order and therefore helpful in everyday practice. The talent was of the very highest order.

Organized medicine may well take notice of the work done by these independent medical clinics.

PRIVILEGED COMMUNICATIONS

Sec. 20-1206 compiled Statutes of the State of Nebraska, provides as follows:

"No practicing attorney, counselor, physician, surgeon, minister of the Gospel or priest of any denomination shall be allowed to give testimony to disclose any confidential communication, properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to usual course of practice and discipline."

A Tiny Thing
—but it means so much

CHRISTMAS SEALS on packages and letters indicate your active interest in saving human lives and overcoming tuberculosis. Use them generously. Their cost is trifling, their good far-reaching. Funds raised by Christmas Seals are spent for defense against tuberculosis throughout the entire year.

SEASON'S GREETINGS
1934

The National, State *and* Local Tuberculosis Associations *of the* United States

BUY CHRISTMAS SEALS

The following decisions exemplifying this statute:

Professional communications in presence of nurse assisting physician privileged unless waived. (It will be noticed that nurses were not included in the statute. Most courts have held that a nurse under the directions of a physician, acting at the time as his assistant, is an agent of the doctor and not permitted to divulge anything seen, heard or said at the particular time of such employment. That what a nurse learns, hears or sees when not under immediate assistant relationship to the doctor is not privileged. This ruling leaves a large loop hole for information by way of nurses.)

Communications by patient to physician not privileged unless necessary to discharge of latter's professional duties. (Whether necessary or not is a judicial question.)

Physicians not permitted to testify as to contagious disease to prevent spread, though mistaken in diagnosis.

Physician not permitted to testify as to condition found upon examination.

Knowledge gained of patient's condition, as well as communications are privileged, but fact of number of calls, not.

Doctor who dressed defendants wound, cannot testify as to condition of latter when called by state.

Privilege not waived, because of party testifies as to his condition, especially where such testimony is given on cross examination.

Patient only may claim privilege; defendant charged with murder cannot.

Physician employed by defendant to examine deceased victim may testify.

Statements by physician to patient, based upon facts recited by latter, privileged.

Section 20-1207 compiled Statutes, State of Nebraska, governs waivers of privileged communications. This paragraph has caused considerable misunderstanding by the profession. It reads as follows:

"The prohibitions of the preceding sections do not apply to cases where party in whose favor the respective provisions are enacted.

(a) Waives the rights thereby conferred,

(b) and if the party to any action now pending, or hereafter brought, shall offer evidence with reference to his physical or mental condition or the alleged cause thereof,

(c) or if the personal representative of a deceased person in any such action shall offer such evidence as to such deceased person, the right conferred by Section 8840 compiled Statutes of Nebraska for 1922 (20-1206) shall be deemed to have been waived as to any physician or surgeon who shall have attended said party or deceased person." (It will be observed that the patient or patient's personal representative must first offer evidence as to the condition claimed before the privilege is deemed waived. Too many physicians fail to observe this requirement and give information before any evidence has been adduced which is not only legally prohibited but professionally prohibited.)

The following court decisions exemplify this statutory measure:

Physician is competent witness if privilege has been waived.

Waiver does not continue to second trial.

Waiver may be withdrawn before acted upon.

Personal representative may waive privilege.

Waiver may be made part of a contract sued on as insurance policy requiring affidavit of physician as to cause of death.

Heirs may examine physician over objection of proponents of will by representative of deceased cross examining physician as to patient's condition.

The benefits accruing to the physician and patient conferred by privileged communications are so far reaching and valuable that privileged communications should be faithfully maintained by the physician and even when legally required to break trust, there is a vast difference between volunteering information and having information extracted. No physician presumes to know law, but a knowledge of some of the fundamentals effecting the medical profession is an asset to any doctor.

—Czar Johnson, Lincoln.

RESEARCH LABORATORIES OF LILLY FORMALLY OPENED

On October 11 the new Lilly Research Laboratories were formally opened in Indianapolis. The affair was of outstanding interest because of the unusual gathering of noted authorities who were assembled there for the occasion.

More than a thousand investigators and research workers were present at the formal opening, the distinguished visitors representing many noted bodies and famous institutions in this and foreign countries.

As part of the exercises Sir Frederick Banting talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Dr. Best and himself which first demonstrated the existence of Insulin, and expressed his great appreciation of the co-operation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of Insulin.

Sir Henry Dale, director of the National Institute for Medical Research, London, and secretary of the Royal Society, chose as his topic "Chemical Ideas in Medicine and Biology."

According to Sir Henry, the change that has taken place in the scope of pharmacy has a revolutionary aspect. He cited the fact that pharmacy not very many years ago was predominantly concerned with the traditional drugs that had come into use through empirical observation. Even though with the years had come new additions from time to time, the therapeutic outlook and attitude had changed but little for centuries. He pointed out that a beginning had been made by pharmacology toward rationalizing the use of those drugs in common use which had an action sufficiently definite to be susceptible to experiental analysis.

The speaker expressed the thought that looking at the change as a whole, one might distinguish two main contributory factors.

The first of these was the recognition of infections as due to the invasion of the body by living micro-organisms. It is a commonplace, he said, that preventive medicine was born of this discovery, that it gave a new direction to the therapeutics of infective diseases, in the search for remedies specifically killing or limiting the growth of the infecting micro-organisms or specifically neutralizing the poisons which they produce in the infected body. A few of the older remedies, indeed, according to the speaker, owed their value to an unconscious application of such specific actions for the control of infective organisms which modern research has since identified: cinchona, ipecacuanha, mercury, and the iodides. Contrast with this, he said, the resources of modern therapeutics, with its range of antitoxins and bacterial products, and its growing list of new synthetic compounds discovered as the result of deliberate and organized search for substances which shall be harmless to the infected patient in doses which kill or prevent the multiplication of the infecting organism. Ehrlich, said the speaker, termed this new type of therapeutics "chemotherapy." A new and exactly chemical basis for these mysterious phenomena of immunity is even now being built, according to Sir Henry, the synthetic production of artificial specific remedies for infection which has, in the course of some twenty-five years, given us arspenamine and other organic arsenical compounds such as tryparsamide; various derivatives of antimony; complex organic substances related to the dyestuffs on the one hand or to natural alkaloids on the other, and specifically effective against the trypanosomes o African sleeping sickness, or against the parasite of malaria, still the most deadly enemy to human life and health, if we view the world's peoples as a whole. We may properly class these synthetic substances, according to the speaker, with the antitoxins and other antibacterial substances, a artificial and natural agents for the removal from the body of harmful invaders from without.

A second principal factor in this change in therapeutic outlook may be found, said the speaker, in the recognition of diseases due to the lack of substances normally present in the body. Modern therapeutics, he said, can show no triumphs more brilliant than those which have followed the discovery of methods of preparing a number of glandular products in a state of sufficient purity to enable them, by artificial administration. to correct an abnormal deficiency. In the speaker's opinion. there can be no doubt that preparations from these glands are destined to acquire an increasing range and success of application, as the methods for purifying and stabilizing their subtle principals are progressively improved, and as clinical science, thus able to apply them, recognizes more clearly the conditions due to partial defects of their natural supply.

The greatest contribution to modern medicine is scientific research conducted by such organizations as Eli Lilly and Company.

END OF VOLUME 19

The final number of Volume 19 of *The Nebraska State Medical Journal* is before you. The youngster will soon attain its majority. Probably half of the physicians in practice in Nebraska today were not on the scene of action or do not remember when it was born. There are those who do remember the events that led to the establishment of the *Journal*. None regret its existence.

The contribution of the *Journal* to scientific medicine and to organized medicine must be considerable.

The last two years have been trying ones for medical journalism but with slight adjustments we have carried on. The past year the *Journal* was held to forty pages per issue. This has caused a little delay in the publication of some papers, but the authors have been very considerate and all will be accommodated within the next several months.

BLOOD PATHOLOGY IN PRE-OPERATIVE SURGERY*

I intend to give a short comment based on findings on examination of 1,000 cases in the past 4 years.

Todd states that crenation of the red blood cells has but little or no clinical value. Therein, I believe he is mistaken.

We have found it to exist in many cases of but little blood pathology; but the more pronounced the blood pathology, the greater the number of crenated red blood cells found.

It is true, crenations may be caused by too rapid drying of the blood on the slide, or by careless technique, but along with these crenations, we find achromia and poikilocytosis.

One point I have not yet classified; that is the blood cell that has the resemblance of the old fashioned cockle burr grown in southwest Missouri. Instead of the regular poikilocytosis, or rather along with poikilocytosis, the burrs are as prominent as the spines on a cactus.

In the cases of primary anemia—one lymphatic leukemia, two pernicious anemia, two chlorosis, six apparent pernicious anemia—cells resembling typical chlorosis and typical pernicious anemia appear in the same smear.

However, an infection was usually located—cholecystitis, chronic appendicitis, infected tubes, or fibroid, and often a myocarditis, infected tonsils, etc.—the patient treated, then operated, and treatment continued until complete recovery.

One case of carcinoma of the stomach with metastasis, resembled a typical pernicious anemia.

One carcinoma of the pylorous had a fairly normal blood picture, until after metastasis, then in about 72 hours showed a blood picture of pernicious anemia.

In one case of cholecystitis with an ulcer of the duodenum in which the blood-picture was normal, a cholecystectomy and invagination of the duodenal ulcer was done. When the stitches were removed, the wound opened up about one-half the length of the incision. In 48 hours we had a typical blood crisis, but fortunately, it responded to treatment.

On the whole, we find that 90 per cent of all cases examined have some form of blood pathology. The last 500 cases show a much higher percentage, probably due to four causes, namely, weather condition, poor diet due to hard times, worry, and more careful keeping of records.

We have had a few cases of infective jaundice, not the hemolytic type. We find a goodly number of anemias, rather severe in type, accompanying hypothyroidism and hypopituitarism.

Careful questioning usually elicits the history that the patient has had a hyperthyroidism with enlargement of the thyroid, but at the present shows a marked recession of the thyroid with a myocarditis, or in some cases, a valvular disturbance.

---

*Presented, recently, before the Adams County Medical Society.

One peculiar thing that I have noted in these cases is a higher percentage of anemia or blood pathology in some form in, or within twenty miles of Hastings, Nebraska, while beyond a radius of forty to fifty miles, the proportion is not so great. Some of the patients examined came from the west coast, some from as far east as Ohio and Michigan, others from South Dakota, Oklahoma and Arkansas. I have not been able to draw any conclusions as to why such a relatively high percentage of blood pathology should be found in and near Hastings.

From a surgical standpoint, a leukocyte count is of but little value in many cases, especially appendicitis, as to whether to operate.

I think it advisable in all cases to make a study of the red-blood picture as well as a differential count of leukocytes. One will be surprised, with a blood picture of poikilocytosis and crenated red-blood cells resembling cockle burrs, how often it points to an infection somewhere in the system. Frequently, only a myocarditis is found. It has been the custom to depend on the differential and we paid but little attention to the red-blood cells. Rarely does a surgeon look over the erythrocyte field with the idea that such a study will assist him in determining the presence of an infection somewhere in the system. But in making such a study, and followed by a careful physical examination, he will be surprised how few times he will err in such a diagnosis.

I usually make it a practice to study all blood smears after the technician has completed her report. Even on a busy day it takes only a moment of one's time and helps one to keep the various blood pictures in mind.

—C. L. Egbert, Hastings.

STATE MEDICINE NOT IN SIGHT

Reports from Washington, just as we go to press indicate that, contrary to what we had been led to fear, there will not be an effort fostered by the President to have health insurance enacted during the coming session of the Congress.

Still later, Dr. Olin West, Secretary A. M. A., telegraphs: "Medical Advisory Committee of Committee on Economic Security adjourned after three days meeting without proposing any plan. Committee asks for further time for study. Leland and Simons of our Bureau of Medical Economics made members of Technical Staff of Committee. Best available advices indicate that official action on sickness insurance will be deferred. We have asked Washington for official statement to be printed in Journal."

CELEBRATING DR. P. H. SALTER'S FIFTY YEARS OF MEDICINE

Sponsored by the Madison-Six County Medica Society, Dr. and Mrs. Peter Harold Salter, Norfolk, were tendered a complimentary dinner at Hotel Norfolk, on the evening of November 2 1934, celebrating the doctor's fifty years in the medical profession.

Following the dinner attended by 125 physicians and their ladies from all parts of Nebraska there were felicitations and toasts by Dr. Carroll D. Evans, Sr., Columbus; Dr. Joseph Bixby Geneva, President, Nebraska State Medical Association; Dr. William Shearer, Omaha, and Dr. William Jepson, Sioux City.

DR. P. H. SALTER

Dr. Morris Nielsen was toastmaster.

Peter Harold Salter was born at Ottawa, and reared at Port Hope, Canada, graduated from Trinity Medical College, Toronto, in the spring of 1884, following which he went to Edinburgh for the school year of 1884-1885 and on examination in the spring was made a Licentiate of the Royal College of Physicians and Surgeons (L. R. C. P. & S.). Thereafter he shipped as surgeon on a steamship plying between Liverpool and East Indian ports, making three trips. Returning to Canada he engaged in practice in his home town of Port Hope for several years.

Dr. Salter came to Norfolk in 1889 and gradually developed a surgical practice in what was then a pioneer community. In later years he built and operated the Norfolk General hospita until a few years ago when he transferred his work to the Lutheran hospital.

Dr. Salter was division surgeon for the North

Vestern railroad for forty years. A quiet, but orceful personage, Dr. Salter is one of the outtanding surgeons of Nebraska. He is a charter nember of the American College of Surgeons.

Dr. Salter, encouraged and aided by Dr. F. A. Long, Madison, organized the Elkhorn Valley Iedical Society in 1896, a society that has done a ot for the medical profession of north Nebraska.

Dr. Salter was president of the Nebraska State Iedical Association for the year 1909-1910.

Besides his wife, Dr. Salter has a daughter nd two sons, one, Dr. George Salter, being asociated with his father and Dr. E. L. Brush in ractice.

FEVER THERAPY RESEARCH PROJECT

A committee for the investigation of fever herapy research has been organized under the uspices of the University of Nebraska College of Medicine. Investigations will be carried out imilar to recommendations made by The Counil on Physical Therapy of the American Medical Association. (*Jour. Am. Med. Assn.,* 103:1308-309, October 27, 1934.)

A machine of the Kettering hypertherm type, simple air conditioned cabinet with which it is ossible to elevate the patient's temperature rapdly and to maintain it at the desired level for an xtended period has been installed at the Lutheran hospital. Other machines will be installed s necessary to carry on this work.

The indications, contraindications and results btained by this form of therapy have been reently discussed by the editor of the *Jour. Am. Med. Assn.* (103:1381-1382, November 3, 1934.)

Any physician interested in utilizing this form of therapy may obtain information from the superintendent of the Lutheran hospital, Omaha. Nebraska.

CANTON HOSPITAL

(Founded in 1835)

FIRST HOSPITAL IN FAR EAST

According to the latest directories there are only 20 fellows of the American College of Surgeons, and 2 fellows of the American College of physicians located in China.

We, the undersigned, as 2 of the representatives of these colleges among this great people, send greetings.

On November 4th, 1935, will occur the centenary of the introduction of western medicine to the people of China.

Before that time the blessings of surgery and medicine, both curative and preventive, as practiced in the west were unknown to the Chinese. It will also be the 100th anniversary of the founding of this hospital, and the Chinese Medical Association has arranged to hold its next general meeting here in honor of the event.

In the face of a stone wall of prejudice and anti-foreign sentiment Peter Parker, Yale, Med. 1831, opened the Canton Hospital on Nov. 4th, 1835, and thus paved the way for a better understanding between Chinese and foreigners. So it was said: "He opened China at the point of a lancet."

After 20 years, so great was the confidence in which Dr. Parker was held by the Chinese and so great was his influence among them that he was appointed United States Commissioner to China.

He was followed by Dr. John G. Kerr, a graduate of Jefferson Medical College, Philadelphia, who directed the hospital for a period of 44 years, and after him Dr. John M. Swan and many other doctors British and American who have maintained the traditions of the hospital, until the present day.

It was at Canton hospital that western medicine was first introduced to the people of China. When Parker and Kerr administered treatment free to the poor it was a new idea which has been taken up gradually by Chinese benevolent societies. Here the first books on modern medicine were translated into Chinese. Dr. Kerr was the first president of the Chinese Medical Association which today numbers over 1,700 members. The first medical school was here established and the first Chinese doctors educated.

In the beginning people came from all over China and more than 200,000 operations have been performed.

Since 1840 when the first lithotomy was done, over 4,000 patients have been treated here for stone in the bladder. In 1847 ether was given for the first time and the first laparotomy done in 1875.

The present staff of the hospital give their full time to the institution and are teaching at the affiliated Hackett Medical College.

Their ambition is to carry on modern medicine and surgery along the most scientific lines, and to make Canton hospital an example of the best traditions of the day for the treatment of the sick, nursing care, social service, and preventive medicine among rural and city people alike. Research along several lines has been carried on by different members of the staff.

The hospital was maintained by the Canton Medical Missionary Society until 1930 when the Lingnan University Board of Directors assumed control. The board is composed of Chinese, Americans and British, and has undertaken the construction of new buildings. The corner stone for the first of these was laid on June 2, 1934.

From Chinese sources $200,000 have been secured. Will you not take a part in this truly international work and so (1) help to bring the people of China and America into closer fellowship, and (2) aid in our plans to foster scientific medicine in China. We need money for the installation of an elevator, for a shadowless lamp for operating room and furniture for the new hospital and subscription to medical journals, etc.

Even a few dollars will count for 3 or 4 times as much in value when changed to our local currency. Checks may be made out to Canton Hospital, Canton, China.

Wm. W. Cadbury, M. D.,
J. O. Thomson, M. D.

CLINIC DAY AT BRYAN MEMORIAL HOSPITAL

Annual clinic day was observed at Bryan Memorial Hospital November 23, with a full day's program. About two hundred physicians, mostly from out state attended.

The clinics were put on by Dr. Russel Wilder, Rochester, Minn., who discussed "Endocrinology" and "Diabetes Mellitus;" Dr. Nathaniel Alcock, Iowa University Medical School, "Transurethral Resection" and "Bladder Malignancy;" Dr. Arthur Desjardiens, Rochester, Minn., "Radiology for Inflammatory and Malignant Conditions" and "Recent Advances in Radiotherapy;" Dr. Loyal Davis, University of Illinois, Chicago, "Head Injuries."

The authorities of Bryan Memorial Hospital and the Staff very graciously tendered a luncheon and a dinner to the physicians in attendance.

INDIAN OBSTETRICS — INDIAN ABORTIONS — INDIAN IMMUNITY TO INFECTIONS

Selections from
"A PRAIRIE DOCTOR OF THE EIGHTIES"*

In the management of obstetric cases it is the midwife or a female relative that officiates. The labors are usually short and relatively easy. This is so because the babies are small and the mother exercises to the time of labor. In the pure blooded Indian there is seldom disproportion between the baby and pelvis and abnormal positions of the baby in utero are rare. The labors are usually conducted in the family lodge or, as is often the case, a birth hut consisting of reeds or brush is constructed by the husband where the expectant mother retires at the onset of labor. The husband absents himself. Not infrequently there is no attendant, the mother acting in the duel capacity of parturient and midwife. The Crede method of expressing the placenta is universally practiced. The maternal and fetal mortality is small.

Some civilized Indians who own their lands and have full citizenship still prefer the tepee and the ground floor for labor. One physician who does some practice among the Indians told me of a call he made to an Indian woman in labor and unable to deliver herself, who lay on a blanket on the floor of the tepee. Another physician told of finding a young woman in labor, lying on some new mown hay in the tepee, absolutely nude. In the first case the doctor had to do an instrumental delivery with no assistance whatever, on the floor of the tepee in a rain and windstorm that extinguished the kerosene lamp and left him to work in the dark. In the other case the doctor insisted the woman go into the house on a perfectly good bed, but only after threatening to leave was he able to get the patient to walk to the bed.

It is said that abortions are not frequently performed. In some tribes it is the custom to interrupt pregnancy at the third or fourth month where the father is supposed to be white. The reason given to justify the procedure is that such babies, half white and half Indian, are usually delivered with difficulty. There is justification for this assumption because such mixed blood does create larger babies with relatively large heads. It is said that the duration of labor among half breeds is twice that of pure breds and that dystocia is far more common.

Authorities who have had opportunity to observe say that the Indian is relatively immune to infection of wounds. The explanation probably lies in the absence of virulent wound infecting micro-organisms rather than in any inherent immunity to infection on the part of the Indian Whatever the explanation, it may be accepted as a fact that the wounds inflicted upon the Indian healed more quickly and with less infection than n the white race and that he could resist wounds hat would be fatal to the white man. The Medicine man was very skillful in the treatment of wounds. He knew nothing of antisepsis but he did practice asepsis to a degree. The wounded were treated in their lodges. Dressings were hanged frequently. Rarely was the wound closed and thus free drainage was assured. The dressngs were clean and of a varied assortment. Powlers and poultices were in common usage. The nore extensive wounds were sutured with sinew on bone needles. Drainage was provided by inerting thin strips of bark. Wicks made of cloth or fiber were sometimes inserted into the wound. The removal of foreign bodies, shot and arrowheads, was skillfully performed. To control bleeding the wound was cauterized or packed with such material as eagle's down or the scrapngs of hides, puff balls or sumac. The cautery consisted of the stalk of Achillea millefolium, about one inch in length. This was inserted into he wound and set afire. The tourniquet was known and used in excessive hemorrhages from wounds of the extremities.

---

*A manuscript awaiting publication, by F. A. Long, Editor, Nebraska State Medical Journal.

FRACTURES

In the treatment of fractures the Indian knew how to provide immobilization. He did not provide extension. Splints were made of fresh rawhide and bark. Windows were cut in the splint for the dressing of compound fractures. Dislocations were cleverly treated, even of the hip.

Eric Stone says: "On the whole, their skill in the care of wounds, fractures and dislocations equalled and in some respects exceeded that of their white contemporary."

Captain Lute North, now 88 years of age, who was an officer of the Pawnee Scouts of the sixties, related to the author the following: A Pawnee Scout was shot through the wrist, shattering the bones half way up the forearm. The army surgeon, called from Fort Sedgwick, wanted to amputate the arm. The Pawnee refused amputation. He appealed to the commanding officer with the statement that if he could get back to his people, he believed he would be able to get the arm healed without amputation. He was sent with a wagon train to the railhead and went to the Pawnee reservation on the Loup river, in eastern Nebraska, and in less than six months his arm was well, although partly anchylosed. This would seem supporting evidence to the theory of the relative immunity of the Indian to infection.

EDITORIAL PARAGRAPHS

Rheumatism is almost non-existent in children under three years of age.

Bloodgood states that Paget's disease of the nipple has been practically eliminated by soap and water. Even a nipple needs an occasional ablution.

"Minimum of statemanship and maximum of politics are two high lights in the inherencies of state medicine," says Editor Whalen of the *Illinois Medical Journal.*

Call for Papers: If you wish to read a paper at the next annual meeting please send your name and title of paper to Dr. R. B. Adams, Secretary, Center McKinley Building, Lincoln.

The Radiological Society of North America will hold its next Annual Meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. The Medical Profession is cordially invited to attend.

An interesting medico-legal case is developing in Keith county. The county board has adopted a schedule of fees for medical and surgical care of indigents and paupers. From this schedule a surgeon demurs and has filed suit for the amount he claims for his services.

New ads in the December *Journal* are Petrolager Laboratories, and the Speaker's Library, Washington, D. C. Present advertisers are renewing their contracts for 1935. The *Journal* advertisers have increased considerably over 1933.

Laennec invented the stethoscope, when, confronted by a fat young female patient whose heart sounds he was unable to hear by immediate osculation, it occurred to him to roll a quire of paper into a cylinder and apply it to the chest. It worked perfectly.

Second marriages are usually marriages of convenience and apt to be without much or any romance, though they may be happy unions. We may sympathize with some widows who in these times of economic stress feel compelled to remarry to assure themselves a livelihood.

Within a few weeks in September and October the black widow spider (Lactrodectus mactans) has been observed in various parts of Nebraska. While numerous instances are reported from the western part of the state it has also been observed at Omaha, Norfolk, O'Neill and Hastings.

A test of a vegetarian diet was made at the

Institute of Physiology, Glasgow University (*J. A. M. A.*, Oct. 27, 1934) which seemed to prove that in prolonged hard muscular exercise the large supply of energy required can best be obtained in small bulk and in palatable form from protein-rich foods of animal origin.

The Council on Medical Education and Hospitals of the American Medical Association has prepared a list of pathologists recognized by the Council. The following names appear for Nebraska: Omaha—Harold E. Eggers, E. T. Manning, W. B. Moody, John T. Myers, A. S. Rubnitz, B. Carl Russum, James P. Tollman.

When Jacques Cartier and his expedition landed in Canada four hundred years ago, being attacked by scurvy, they learned from the native Indians to cure the conditions with an infusion of the fresh sprouting tips of a species of fir tree. Nobody can guess how long the Canadian Indians had possessed this life-saving knowledge.

As a result of a study of the marriage of cousins, Davenport reports that inbreeding is not in itself the cause of defective traits. Through inbreeding, however, existing traits, good or bad, are strengthened. Traces of muscular abnormality, epilepsy, insanity, feeblemindedness in three generations are readily transmitted.

At the recent Omaha-Midwest Clinics Graeme Mitchell commenting on the end result of tonsillectomy stated that tonsillectomized children were less prone to diphtheria, but that this is not true of other diseases; that tonsillectomy increases the incidence of chorea and that laryngitis and bronchitis are more frequent in tonsillectomized children.

Dr. John Buis, Pender, has contrived a spring device attachment to a syringe for giving intravenous injections. It relieves all the strain or cramp in the thumb or hand. The needle is inserted into the vein and when blood shows in the syringe, trip the release hammer and the solution passes into the vein at the regular speed without any effort on the part of the physician.

Dorsey, Los Angeles, thinks he has solved the question of premature baldness in men. He calls it alopecia traumatica and accounts for it by the wearing of tight hats; hats tight over the temporal region impeding the circulation of blood. He points to the men with oval or broad heads as usually bald while long narrow headed persons rarely are bald and women, who do not wear tight hats, never.

A new phase of medical jurisprudence is presented in the case of Dr. Fred H. Albee, (noted New York and Florida orthopedic surgeon), versus the Medical Society of the County of New York. Dr. Albee had been expelled from the society because his name appeared on the dining car menu of a southern railroad in connection with his Florida hospital. Albee disclaimed responsibility for the purported ad and the Supreme court ordered his reinstatement.

The American Association for the Study of Goiter again offers the Van Meter Prize Award of $300 and two honorable mentions for the best essays on the subject of goiter provided they meet the standards of the award committee. The essays should be based on original research work on the subject of goiter, preferably its basic cause. The prize essay or its abridgement is to be presented at the annual meeting of the Association to be held in Salt Lake City, Utah, in June, 1935. Competing manuscripts should be in the hands of the Corresponding Secretary, W. Blair Mosser, M. D., Kane, Pa., not later than April 1st, 1935.

In Germany the Hitler government has reduced the number of medical students from 25,000 in 1933 to 15,000 in 1934. In France a physician-senator has introduced a bill designed to limit the number of medical students in French schools. The number of physicians in France has increased from 16,815 in 1900 to 27,500 in 1928. The number of medical students has risen from 8,128 in 1929 to 10,338 in 1933. Not alone does the United States have a problem of overcrowding of the profession.

Reactions are asked to the suggestion that a Home be established and maintained for retired men and women of the medical arts, one centrally located and operated with club-like service, where, for a few thousand dollars, those eligible could, with self-respect and comfort, purchase life membership? Funds as a nucleus to such an undertaking are available for sponsoring the erection of a manor building consisting of a central dining hall, kitchen, auditorium and recreation center, with semi-detached residential bungalows (connected by covered passage-ways) in a woodland retreat ideally located for such an undertaking, (presumably in Indiana). While most of us will wish that we may be spared such an alternative in later life, the suggestion must appeal to all of us as a movement of the utmost importance.

The spinal column is a long bunch of bones. The head sits on top and you sit on the bottom.

OBITUARY

August Frederick Jonas, Omaha; retired; native f Wisconsin; Bennett Medical College, 1877; Ludwig-laxmillian University, Munich, 1884; surgeon in maha since 1887; chief surgeon, Union Pacific Sysem for twenty-seven years; professor of clinical surery Omaha Medical College and of its immediate uccessor, the Nebraska University College of Mediine for about thirty-five years; dean of the former edical school, from 1899-1902; retired some years go as professor emeritus; honorary L.L. D., Nebraska niversity; president Nebraska State Medical Assoiation, 1905-1906; sometime president of the Western urgical Association; also of the Missouri Valley ledical Society; once vice president of the American ledical Association, also of the American Surgical ssociation; an early-day president of the Omaha-ouglas County Medical Society.

AUGUST FREDERICK JONAS

Dr. Jonas was a member of the Societe Internaionale de Chirurgie; a frequent contributor to surgial literature; a tireless worker in his field; much nterested in art, literature and mineralogy for the are of which he had a specially built library and nuseum; special medical aid during the World War o the Governor of Nebraska with the rank of Capain; recognized as one of the ablest surgeons of the liddle West and known in surgical circles all over his country and in Europe; a charter member of the merican College of Surgeons.

He died November 12, 1934, after seven years of emi-invalidism (Aphasia) aged about seventy-six ears.

Surviving are a widow, a daughter, and two sons, ne of whom, Dr. August F. Jonas, Jr., is at present erving an interneship in Johns Hopkins hospital.

William Landis Heilman, Sterling, Neb.; Ensworth ledical College, St. Joseph, Mo., 1897; member of the ebraska State Medical Association; formerly a harmacist; aged 79; died, July 16, 1934, of heat troke.

Earl E. Boyd, Central City, Nebr.; Lincoln Medical College, 1906; former mayor of Central City; captain in the World War; practitioner at Central City for twenty-seven years; candidate for county supervisor in the November election; died of apoplexy on the eve of election, November 5, 1934, aged sixty-three years. A widow and son, Dr. Earl Boyd, Montreal, survive.

Julius Lingenfelder, Hermann, Mo., graduated in Germany, in 1889; practitioner at West Point, Pierce and Norfolk during the early nineteen hundreds; later in St. Louis for a number of years; more recently founder and superintendent of a health colony at Gaseconde, Mo.; a man of superior attainments and a writer of some note on medical and philosophical subjects; died early in November, aged about seventy-six years.

James F. Paddleford, Miller, S. D.; University of Kentucky, Medical Department, Louisville, 1904; sometime practitioner in Omaha; died November 18, 1934, aged about sixty-five years. Interment in Omaha.

Albro J. Ames, Potter, Nebr., not in practice; Creighton University Medical School, 1901; practitioner at Omaha and North Platte before locating at Potter; died following an auto accident, November 14, 1934, aged about eighty-four years.

SCIENTIFIC EXHIBIT, ATLANTIC CITY MEETING, A. M. A.

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applications be filled out on the regular form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

AUXILIARY NEWS NOTES

The Woman's Auxiliary to the Richardson County Medical Association at their last business meeting in Falls City, decided to co-operate with the Health Department of the Woman's Club in placing a speaker on Tuberculosis in the schools of the County. The Auxiliary also decided to sponsor a Pageant to promote the Christmas Seal Sale (which is conducted by the Health Department).

Mrs. H. R. Miner, our State President, reported that two new states had come into the National organization recently, and that the membership had increased 5,000 in the last year.

A report was received from the County Nurse show-that she is making very good use of our obstetrical kit, having used all or parts of it twenty times in the past five months.

* * * * * *

Forty-five members of the Lancaster County Auxiliary attended the tea held at the home of Mrs. Stanley Zemer on November 7. At the business meeting it was announced that after the holidays a regular study of public health would be followed. On the fourth Wednesday of every month at 10:30 a. m. the group will meet in the Medical Society rooms to hear a speaker—doctor, nurse or non-medical man—on subjects such as "The Prevention of Blindness," "Purchaseable Public Health," "General Sanitation and Disease Control."

Mrs. Miner, Nebraska State President, has been asked to tell the Kansas women about our program on October 26, at Hiawatha, Kansas.

At the meeting in Chicago, September 22, of the National Board it was announced that New York State was being organized—opening up unlimited possibilities. It was suggested that at the convention in Atlantic City next June there would be group luncheons (to replace the conferences) in the nature of round table discussions and are to be attended by members particularly interested in Hygeia, Public Relations, and Health Education.

* * * * * *

On October 25, covers were placed for twenty-four ladies at a seven o'clock buffet dinner party given at the home of Mrs. W. D. McGrath, Grand Island, the occasion marking the first fall meeting of the Tri-County (Hall-Merrick-Howard) Medical auxiliary.

A business meeting was held, following the dinner, after which the guests enjoyed informal games and bridge.

Mrs. Ernest L. MacQuiddy, of Omaha, whose husband was the guest speaker at the meeting of the Hall-Merrick-Howard Counties Medical Society, meeting simultaneously at the St. Francis Hospital, was an out-of-town guest. Other out-of-town ladies present included Mrs. Condon, Mrs. Holmes, and Mrs. Hanesch, of St. Paul; Mrs. Andrew Brown, Central City; Mrs. Sawyer, Hildreth; Mrs. Hubbell, Wood River.

Ladies of the Auxiliary presiding as hostesses at this affair were Mrs. A. P. Synhorst, Mrs. J. E. Gelow, Mrs. Amil Johnson, Mrs. Earle Farnsworth, Mrs. W. W. Arrasmith, Mrs. J. G. Woodin, Mrs. B. R. McGrath and Mrs. W. D. McGrath.

* * * * * *

The Woman's Auxiliary to the Omaha-Douglas County Medical Society has adopted an intensive program on health education as the principal activity for the current year.

Under the direction of the Chairman of the committee on Health Education, Mrs. C. W. Pollard, several members are already engaged in the preparation of special programs.

Mrs. M. Grodinsky is making a survey of the milk situation in Omaha and Douglas County and a report will be presented at an early date.

Prevention of Blindness will be the subject of the program to be presented by Mrs. Olin J. Cameron.

Mesdames Clarence Rubendall and Herbert F. Gerald are preparing a program on the prevalence and control of diphtheria.

In co-operation with the health program in the schools and to further stimulate the interest of the school children in health problems, a list of questions on sanitation and public health will be prepared for submission to the children in the Omaha schools.

Credit is due to Mrs. A. F. Lang, Falls City, and to Mrs. John Freyman, Omaha, for valued assistance in gathering these notes.

—Mrs. Roy Whitham, Chairman, Publicity.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was held October 9, president Rix in the chair.

The scientific session consisted of a Clinical Symposium on the Thyroid Gland with Dr. R. L. Traynor presenting a paper on "Diagnosis of Thyroid Disease;" Dr. M. C. Andersen, "The Thyroid Heart: Its Problems and Treatment;" Dr. A. D. Cloyd, "Relationship of the Thyroid to Other Endocrine Disturbances;" Dr. Overgaard took the place of Dr. James Kelly, who was out of the city, and spoke on "Th Value of Radiation Therapy in the Treatment of Thyroid Diseases." Dr. N. F. Hicken, formerly of Cleveland and now associated with Dr. Best, closed th Symposium with a talk on "The Surgical Management of Some Thyroid Problems."

Dr. Bliss opened the discussion and was followe by Dr. Ross, Dr. Gardiner, Dr. Conlin and Dr. Sachs

On September 27, 1934, Dr. Frank Condon of S Paul, presented a paper on "Peptic Ulcer" before th **Hall-Merrick-Howard County Medical Society.** Th consensuse of feeling was that these patients shoul have medical treatment and a lot of it before surger was resorted to. At the same meeting Dr. Lamor Geissinger, D. D., spoke on "The Charitable Responsibilities of the Physician." This was an unusua paper as Dr. Geissinger has had charge of charitabl needs in Grand Island practically ever since the depression necessitated its being instituted in an organized manner.

Dr. Ernest L. MacQuiddy of Omaha, presented paper on "Allergic Problems as Met in Everyda Practice" before the **Hall-Merrick-Howard Count Medical Society,** October 25, 1934.

Dr. MacQuiddy discussed the allergies of organ as the eyes, facial skin, chest, body skin and gastrointestinal tract. He also discussed the treatmen especially of hay fever, bronchial asthma, allergi rhinitis and urticaria, encouraging the use of potassium iodide freely, intravenous glucose and Fowler solution in the treatment of the bronchial asthmat cases. He felt that in order for a case to be allergi there should be a hereditary history of allergy, o there should be childhood manifestations of allergi sensitivity such as the eczemas, or the blood cou should show a high eosinophilia 3-25%. He also state that he used the cheese allergen manufactured b Sharpe and Dohme to test for sensitivity.

Another paper presented by Mr. H. P. Zieg, pres dent of the Underwriters Association of Grand Island on the subject of "Are Medical Examinations Necessary in Life Insurance?" was also enjoyed.

Members of the **Tri-County Medical Society,** physicians in Washington, Dodge and Burt countie with their wives, attended a dinner and meeting the Episcopal church basement in Blair, October 2 Forty-eight persons were present at the banquet, ar one of the best meetings in recent months was enjoyed.

Papers were read by Dr. R. A. Davies of Arlingto and Dr. M. A. Wood of Tekamah. The next meetir of the group, it was announced at the meeting, w be held Monday, November 26, at Oakland.

The **Western Nebraska Clinical Assembly,** sponsore by the **Eleventh and Twelfth Councilor District Medical Societies,** was held at Sidney, November 12th ar 13th in conjunction with the Western Nebraska Dental Society. The dental meetings were held at t auditorium and the medical meetings at the Sidn Country Club.

Luncheons were served at the Country Club Monday and Tuesday at which times the four past pres dents of the state society present favored the meeti with interesting talks. Dr. Hohlen explained t workings of the F.E.R.A.

A joint banquet was held with the dentists a their wives Monday evening. Dr. A. R. Everett Kimball was toastmaster.

The medical program follows:

"Changing Ideas in the Clinical Use of Diet F. Lowell Dunn, Omaha; "Common Skin Diseas Seen by the General Practitioner," Donald J. Wils maha; "Oral Infections," Thomas Mullins, Chadron, C. Brownlee, Denver, F. Lowell Dunn, Omaha; Traumatic Surgery," John R. Nilsson, chief surgeon, . P. R. R., Omaha; "Functional Nervous Conditions," . Alexander Young, Omaha; "Head Injuries," John oster, Denver; "Practical Considerations in the reatment of Cancer," Sanford Withers. Denver; "Al-rgy in General Medicine," L. D. Cunningham, Den-er; "X-ray Evaluation of the Obstetric Pelvis," John . Evans, Denver.

Dr. G. W. Pugsley, Bayard, was elected president nd Dr. W. C. Harvey, Gering, secretary-treasurer.

The **Eighth Councilor District Medical Society** met t O'Neill, November 13, over a dinner.

Dr. E. L. MacQuiddy, Dr. H. B. Hamilton and Dr. erbert Davis, all of Omaha, put on the program.

The **Sixth Councilor District Medical Society** No-ember meeting was held at Wahoo, November 19, ith a dinner at the Methodist church.

The program follows:

"The Diabetic Problem," Frank Conlin, M. D., Oma-a; "The Diabetic Kidney," E. J. Kirk, M. D., Omaha; The Diabetic Eye," Wm. H. Stokes, M. D., Omaha; The Management of the Surgical Diabetic," Alfred rown, M. D., Omaha; "Treatment of the Diabetic," rank Conlin, M. D., Omaha.

The **Northeast Nebraska Medical Society** held its nnual meeting November 13 at Randolph, following . dinner served to 35 physicians and their ladies.

Dr. F. G. Dewey, Coleridge, gave a case report and r. R. P. Carroll, Laurel, gave a paper on "Eclampsia."

A general discussion followed on the attitude of the rofession toward NERA fees.

Dr. Walter Benthack, Wayne, was elected president nd Dr. J. C. Kildebeck was reelected secretary-reasurer.

The **Fillmore-Saline County Medical Society** met at Wilbur, November 22, following a dinner tendered by rs. Hein and Kirchman, hosts.

The program:

Dr. J. W. Thomas, Lincoln, "The Present Status of he Treatment of Sinusitis"; Dr. Harold Moyer, Lincoln, "Vaginal Discharge"; Dr. Edward Katskee, Lincoln, "Rectal Disease."

HUMAN INTEREST TALES

Dr. E. S. Blair, Wayne, is reported very ill.

Dr. Paul J. Heidrick has located at Paxton.

Dr. W. H. Fritz, a recent interne, has located at Schuyler.

Dr. F. E. Way, Wahoo, is reported seriously ill from a cerebral hemorrhage.

Dr. R. R. Anderson, formerly of Omaha, has located at Weeping Water.

Dr. M. D. Pass, for 18 years in practice at Broadwater, has located at Bayard.

Dr. W. N. Nelson, for some time in practice at Hardy, has gone to California.

Dr. and Mrs. C. W. Way, Wahoo, spent ten days in Kansas City visiting friends.

Dr. and Mrs. O. R. Ivans, Crawford, motored to Okmulgee, Okla., the latter part of October.

Dr. H. I. Stubblefield, Ruskin, spoke on preventive medicine before the Superior Kiwanis club, recently.

Dr. and Mrs. C. C. Drummond, Norfolk State Hospital, spent their vacation at Des Moines and Lincoln.

Dr. C. W. Hyland, Los Angeles. recently visited Palmer where he was in practice fifteen years ago.

Dr. H. M. Harvey, Gothenburg, recently became president of the Nebraska Eclectic Medical Association.

Dr. W. P. Wherry, Omaha, attended the meeting of the Southern Medical association at Dallas, Texas, last month.

Dr. C. J. Miller, Ord, underwent an operation at Rochester, recently, but is at his home well on the way to recovery.

Drs. F. W. Heagey and A. David Cloyd of Omaha, have dissolved partnership, the change having taken place on November 1.

Dr. Adolph Sachs recently gave an address on "The Doctor," before the pre-medic students of the Municipal University, Omaha.

Dr. and Mrs. H. W. Saylor, Bruning, are spending a month at Long Beach and other California points. They have a daughter at Long Beach.

Dr. E. R. Hayes, formerly of Falls City, Nebraska, has moved to Omaha and is associated with Dr. F. W. Heagey at 1326 Medical Arts Building.

Dr. E. D. Thurston, for thirty-five years in practice at Burwell, has retired from practice and has moved to Portland, Oregon, to be near a daughter.

Dr. E. P. Murdock, former physician at Ogallala, but more recently a district CCC surgeon at Lewiston, Idaho, has returned to open an office at Ogallala.

Dr. Floyd Murray, Omaha; Dr. Harold Lynch, Fairbury; Dr. Mason Lathrop, Wahoo, were among those who received Fellowships in the American College of Surgeons at the recent Boston meeting.

Dr. Thomas H. Long, Tacoma, brother of Dr. F. A. Long, Madison, and at one time associated with him in practice, was elected coroner of Pierce county (Tacoma) at the recent election, by a large majority. His opponent was a brother of Food Administrator Hopkins.

EVALUATION OF METHODS USED IN PHYSICAL THERAPY

Howard T. Karsner and Harry Goldblatt, Cleveland (*Journal A. M. A.*, May 13, 1933), state that the success or failure of any form of therapy or therapeutic agent in human medicine is gaged by its action on living patients. The evaluation of the treatment is not to be measured by the opinions of the physician but rather by the facts he can demonstrate. Physical therapy employs a variety of physical agents: massage, therapeutic exercise, water, air, radiations (heat, light, ultraviolet, x-rays, radium), vibrations (mechanical. sound) and electricity of various forms. All applied science is built on a groundwork of pure science, and in the same manner all the appliances of use in physical therapy have a background of knowledge in pure physics. Furthermore, rational therapeutics has at its call a certain volume of knowledge of the physiologic effects of the agents employed. Thus it is known that certain physical agents may cause certain physiologic and pathologic reactions. The information available about these effects is much less than is true of a number of chemical substances used as drugs. For the furtherance of physical therapy it is necessary that a much larger bulk of concrete and exact information be built up than is now available.

THE ABSENCE OF DETERIORATING EFFECTS OF BROMIDES IN EPILEPSY

Harry A. Paskind, Chicago (*Journal A. M. A.*, July 14, 1934), found that almost all writers on the use of bromides in epilepsy have stated that, although they are efficient in eradicating or ameliorating the seizures, they are dangerous in that they sometimes produce mental deterioration. A study of fifty-four patients with epilepsy who have taken bromides in sufficient amounts to affect the seizures for from one to seventeen years show that only three, or 5.5 per cent, became deteriorated. The occurrence of deterioration in this more adequately treated group was less than in a larger, less adequately treated group. The misleading statements in the literature regarding the adverse effects of bromide in epilepsy are due to failure to distinguish between intoxication and deterioration, the use of bromides in persons with epilepsy who were destined to deteriorate without their use, and the chance occurrence of behavior disturbances in insane or neurotic epileptic patients who had received bromides and in whom such behavior disorders occur without bromides.

ALUM-PRECIPITATED DIPHTHERIA TOXOID: RAPIDITY OF IMMUNIZATION FOLLOWING ONE DOSE

The results that A. E. Keller and W. S. Leathers, Nashville, Tenn. (*Journal A. M. A.*, Aug. 18, 1934), obtained following the injection of one dose of 1 cc. of alum-precipitated diphtheria toxoid indicate that immunity to diphtheria may be produced rapidly. In one group of twenty-three Schick positive children. 60 per cent were Schick negative in fourteen days. In the same group, 95.6 per cent were Schick negative in twenty-eight days and 100 per cent in forty-two days after the injection. In another group of fifty-three children, 92.4 per cent were Schick negative twenty-two days after receiving one injection of alum-precipitated diphtheria toxoid, 94.3 per cent were negative in sixty days, and 96.2 per cent were negative in ninety days after immunization. The results following immunization with a single dose of alum-precipitated diphtheria toxoid compare favorably with those obtained following two doses of toxoid without alum or toxoid with alum and are much better than those reported following one dose of toxoid without alum and with alum or three injections of standard diphtheria toxin-antitoxin mixture.

ROSTER OF OFFICERS—1934

Joseph Bixby, Geneva, President	193
C. A. Selby, North Platte, President-elect	193
George L. Pinney, Hastings	193
William Shepherd, Rulo	193
R. B. Adams, Lincoln, Secretary-Treasurer	193

COUNCILORS

A. P. Overgaard, Omaha, Secretary	193
W. R. Boyer, Pawnee City, Chairman	193
R. J. Lehnoff, Lincoln	193
E. L. Brush, Norfolk	193
Homer Davis, Genoa	193
H. E. Potter, Fairbury	193
D. D. King, York	193
W. J. Douglas, Atkinson	193
R. D. Bryson, Callaway	193
L. W. Rork, Hastings	193
C. A. Selby, North Platte	193
A. L. Cooper, Scottsbluff	193

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	193
B. F. Bailey, Lincoln	193

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincol

PROGRAM COMMITTEE

R. B. Adams, Chairman	Lincol
Morris Nielsen, Chairman Medical Section	Blai
J. D. McCarthy	Omah
J. W. Duncan, Chairman Surgical Section	Omah
A. L. Miller	Kimbal

CANCER COMMITTEE

James F. Kelley, Omaha, Chairman	193
Geo. Covey, Lincoln	193
W. C. Harvey, Gering	193
John Buis, Pender	193
J. M. Willis, McCook	193

PUBLIC POLICY AND LEGISLATION

B. F. Bailey, Chairman	Lincol
J. W. Duncan	Omah
R. W. Fouts	Omah
E. W. Rowe	Lincol
L. F. Egan	Hasting
R. B. Adams, Ex-Officio	Lincol

JOURNAL AND PUBLICATION

F. A. Long, Chairman	Madiso
A. F. Tyler	Omah
B. F. Bailey	Lincol
R. B. Adams, Ex-Officio	Lincol

CAMPAIGN COMMITTEE

K. S. J. Hohlen, Chairman	Lincol

COUNCIL ON MEDICAL EDUCATION

J. S. Welch, Chairman	Lincol
F. Heagey	Omah
F. W. Buckley	Beatric

MEDICO-LEGAL DEFENSE

R. W. Fouts, Chairman	Omah
O. R. Platt	North Platt
R. B. Adams	Lincol

PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls Cit
F. W. Heagey	Omah
John T. Myers	Omah
J. S. Welch	Lincol
C. W. M. Poynter	Omah

This Book is due on the last date stamped below. **No further preliminary notice will be sent.** Requests for renewals must be made on or before the date of expiration.

DUE	RETURNED
FEB 15 1954	

A fine of twenty-five cents will be charged for each week or fraction of a week the book is retained without the Library's authorization.